

## **Appendix 10.1: Transport Assessment**



Pell Frischmann

Dunside Wind Farm

Transport Assessment

June 2023

106452

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<b>Report Ref.</b>	<b>Dunside Wind Farm_Transport Assessment_v1.4</b>					
<b>File Path</b>	<a href="https://pellf.sharepoint.com/sites/EdinburghOfficeTeam/Shared Documents/General/Projects/106452_LUC_Dunside/01 - WIP/Reports/EIA and Transport Assessment/TA/Appendix 10.1 Transport Assessment (Appendix 10.1)_ (1.3).docx">https://pellf.sharepoint.com/sites/EdinburghOfficeTeam/Shared Documents/General/Projects/106452_LUC_Dunside/01 - WIP/Reports/EIA and Transport Assessment/TA/Appendix 10.1 Transport Assessment (Appendix 10.1)_ (1.3).docx</a>					
<b>Rev</b>	<b>Suit</b>	<b>Description</b>	<b>Date</b>	<b>Originator</b>	<b>Checker</b>	<b>Approver</b>
A		Draft	24/04/2023	S Cochrane	G Buchan	G Buchan
B		Update following client comments	09/05/2023	S Cochrane	G Buchan	G Buchan
C		Update following client comments	09/06/2023	S Cochrane	G Buchan	G Buchan
D		Update following client comments	14/06/2023	S Cochrane	G Buchan	G Buchan
Ref. reference. Rev revision. Suit suitability.						

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# 1 Introduction

## 1.1 Purpose of the Report

Pell Frischmann Consultants Ltd (PF) has been commissioned by LUC Ltd on behalf of EDF Energy Renewables Ltd (the Applicant), to undertake a Transport Assessment (TA) for the proposed Dunside Wind Farm (the Proposed Development), located in the Lammermuir Hills, within the administrative boundary of the Scottish Borders Council (SBC).

The report identifies the key transport and access issues associated with the Proposed Development, including the route for abnormal loads. The TA identifies where the Proposed Development may require mitigation works to accommodate the predicted traffic; however, the detailed design of these remedial works is beyond the agreed scope of this report. Any mitigations works will be agreed with SBC and Transport Scotland (TS) prior to construction and deliveries taking place.

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## 1.2 Report Structure

Following this introduction, the TA report is structured as follows:

- Chapter Two describes the proposed development;
- Chapter Three reviews the relevant transport and planning policies;
- Chapter Four sets out the methodology used within this assessment;
- Chapter Five describes the baseline transport conditions;
- Chapter Six describes the trip generation and distribution of traffic in the Study Area;
- Chapter Seven summarises the traffic impact assessment;
- Chapter Eight considers mitigation proposals for development related traffic within the study network; and
- Chapter Nine summarises the findings of the TA and outlines the key conclusions.

## 2 Proposed Development

### 2.1 Site Location

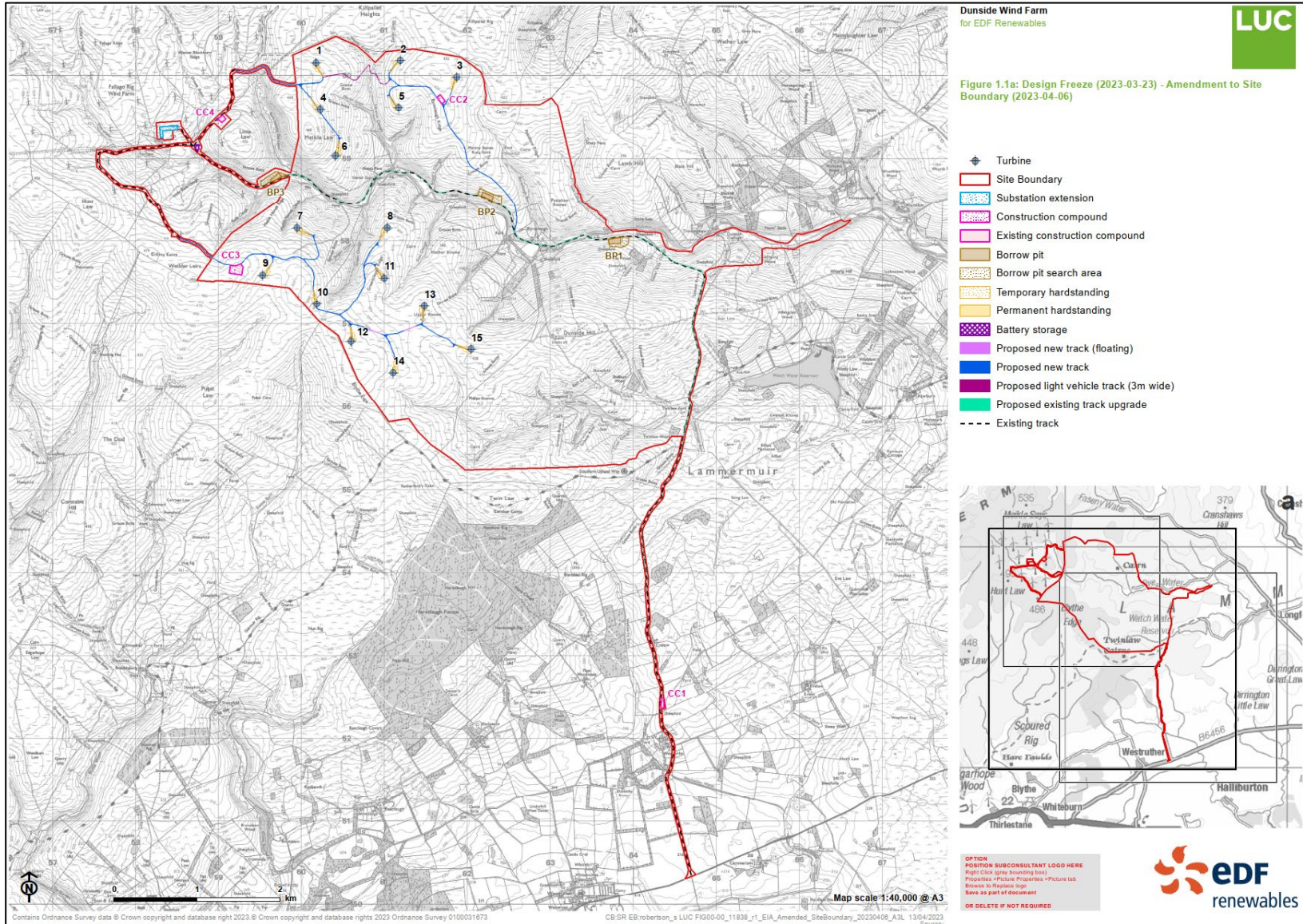
The Proposed Development Site is located in the Lammermuir Hills, approximately 6 kilometres (km) north of Westruther and 7 km west of Longformacus, in the Scottish Borders.

The Site is predominantly used for sheep grazing and moorland managed for grouse shooting and lies adjacent to the operational Fallago Rig Wind Farm. The northern Site boundary forms part of the boundary between the Scottish Borders and East Lothian.

The location of the Site is shown in Figure 1.



Figure 1 Site Location



## 2.2 Proposed Development

The Proposed Development will comprise the following:

- Up to 15 turbines, each with a maximum tip height of 220 metres (m) (with an external transformer kiosk);
- Crane Hardstandings adjacent to each turbine position;
- Four new watercourse crossings and associated infrastructure;
- Approximately 15 km of proposed wind farm tracks and approximately 1.1 km of proposed light vehicle tracks;
- Approximately 17.5km of existing access tracks (including some areas of widening/upgrading);
- Onsite underground electrical cables and cable trenches;
- Control building and extension to Fallago Rig substation; and
- A 20 MW battery storage area.

In addition to the above components associated with the operation of the Proposed Development, construction of the Proposed Development will also require the following components:

- Four construction compounds (two existing compounds which will remain in situ following completion of the Proposed Development, and two proposed which will be restored following construction), laydown area(s) and car parking; and
- Up to three temporary borrow pits which will be closed and reinstated following completion of construction.

A complete description of the Proposed Development for the purposes of the Environmental Impact Assessment (EIA) regulations is provided in EIA Report Volume 1: Chapter 3.

## 2.3 Candidate Turbines

The Siemens SG170 turbine was selected by the Applicant as the candidate turbine for the purposes of this TA and appended Route Survey Report (RSR), to provide a worst case assessment. The details of the components have been provided by Siemens and are detailed in Table 1. These feature the UK tower design option, designed to keep tower diameters for tip heights in excess of 200 m below 4.8m diameter.

Table 1 Turbine Size Summary

Component	Length (m)	Width (m)	Height / Min Diameter (m)	Weight (t)
Blade	83.741	4.186	3.500	29.000
Mid Tower 1	18.200	4.700	4.436	84.328
Mid Tower 2	23.800	4.436	4.427	84.548
Mid Tower 3	26.880	4.427	4.021	71.771
Top Tower	29.970	4.021	3.503	63.863

The RSR detailing the turbine components in detail and the proposed access route, with associated swept path assessment drawings is attached in Appendix A.

The selection of the final turbine model and specification will be subject to a commercial procurement process following consent of the application. The dimensions may therefore vary slightly from those assumed as part of this assessment.

To provide a robust assessment scenario based upon the known issues along the access route, it has been assumed that all blades would be carried on a Dolly Clamp trailer to reduce the need for mitigation in constrained sections of the route. Where constraints are significant, blades would be transferred onto a ten-axle blade lifting trailer to reduce the amount of third-party land required and to reduce the extents of associated physical improvements. This trailer can lift blades up to a maximum angle of 60 degrees to clear potential constraints.

Towers would be carried in a 4+7 clamp adaptor style trailer, whereas loads such as the hub, nacelle housing and top towers would be carried on a six-axle step frame trailer.

Examples of the vehicles and trailers that are likely to transport loads are shown in Figures 2, 3 and 4.

Figure 2 Super Wing Trailer



Figure 3 Blade Lifter Trailer



Figure 4 Tower Trailer



## 3 Policy Context

### 3.1 Introduction

An overview of relevant transport planning policies has been undertaken and is summarised below for national and local government policies.

### 3.2 National Policy and Guidance

#### 3.2.1 National Planning Framework (NPF4)

The National Planning Framework (NPF) is a long-term plan for Scotland that sets out where development and infrastructure is needed in the country. NPF4 sets out the Government's plan looking forward to 2045 that will guide spatial development, set out national planning policies, designate national developments and highlight regional spatial priorities. It is part of the development plan, and so influences planning decisions across Scotland.

NPF4 puts the climate and nature crises at the heart of the Scottish planning system and was adopted in February 2023.

Policy 11 which relates to Energy makes specific reference to the impacts of construction traffic associated with renewable energy projects. Policy 11 states the following:

e) In addition, project design and mitigation will demonstrate how the following impacts are addressed:

- vi. impacts on road traffic and on adjacent trunk roads, including during construction.

The assessment undertaken as part of this TA and the associated Environmental Impact Assessment Report (EIAR) has taken cognisance of this and provided appropriate mitigation where necessary.

#### 3.2.2 Planning Advice Note (PAN) 75

Planning Advice Note (PAN) 75: Planning for Transport provides advice on the requirements for Transport Assessments. The document notes that:

*"... transport assessment to be produced for significant travel generating developments. Transport Assessment is a tool that enables delivery of policy aiming to integrate transport and land use planning."*

*"All planning applications that involve the generation of person trips should provide information which covers the transport implications of the development. The level of detail will be proportionate to the complexity and scale of the impact of the proposal...For smaller developments the information on transport implications will enable local authorities to monitor potential cumulative impact and for larger developments it will form part of a scoping exercise for a full transport assessment. Development applications will therefore be assessed by relevant parties at levels of detail corresponding to their potential impact."*

#### 3.2.3 Onshore Wind Turbines; Online Renewables Planning Advice (May 2014)

The most recent Scottish Government advice note regarding onshore wind turbines was published in 2014. The advice note identifies the typical planning considerations in determining applications for onshore wind turbines including landscape impact, impacts on wildlife and ecology, shadow flicker, noise, ice throw, aviation, road traffic impacts, cumulative impacts and decommissioning.

In terms of road traffic impacts, the guidance notes that in siting wind turbines close to major roads, pre-application discussions are advisable. This is important for the movement of abnormal indivisible loads during the construction period, ongoing planned maintenance and for the decommissioning phase.

### 3.2.4 Transport Assessment Guidance (2012)

Transport Scotland's (TS) Transport Assessment Guidance was published in 2012. It aims to assist in the preparation of Transport Assessments (TA) for development proposals in Scotland such that the likely transport impacts can be identified and dealt with as early as possible in the planning process. The document sets out requirements according to the scale of development being proposed.

The document notes that a TA will be required where a development is likely to have significant transport impacts but that the specific scope and contents of a TA will vary for developments, depending on location, scale and type of development.

## 3.3 Local / Regional Policy and Guidance

### 3.3.1 Scottish Border Council, Local Access Transport Strategy (LATS)

The Local Access and Transport Strategy (LATS) is a key document for the SBC, setting out what are considered to be the key transport and access issues affecting the area, along with proposed approach to these issues. The key aspects of the policy in respect to development such as renewable energy are:

- Ensuring that development does not adversely impact on the transport network; and
- Identifying requirements for developer contributions to help mitigate against any adverse impact on the transport network from development.

The LATS Main Issues Report (LATS - MIR) was published in October 2015 and has yet to be fully approved by SBC.

### 3.3.2 Scottish Borders Council, Local Development Plan (2016)

Policy ED9: Renewable Energy Developments within the SBC Local Development Plan (LDP) which was adopted in 2016 is relevant to the Proposed Development. The policy states that:

*“SBC will support proposals for both large scale and community scale renewable energy developments, including commercial wind farms, single or limited scale wind turbines, biomass, hydropower, biofuel technology, and solar power where they can be accommodated without unacceptable significant adverse impacts or effects, giving due regard to relevant environmental, community and cumulative impact considerations.*

*The assessment of applications for renewable energy developments will be based on the principles set out in Scottish Planning Policy (2014), in particular, for onshore wind developments, the terms of Table 1: Spatial Frameworks. Renewable energy development, including wind energy proposals, will be approved provided that there are no relevant unacceptable significant adverse impacts or effects that cannot be satisfactorily mitigated. If there are judged to be relevant significant adverse impacts or effects that cannot be satisfactorily mitigated, the development will only be approved if the council is satisfied that the wider economic, environmental and other benefits of the proposal outweigh the potential damage arising from it.”*

### 3.3.3 SEStran, The Regional Transport Strategy (2015)

The Regional Transport Strategy for the South East of Scotland is prepared by SouthEast Scotland Transport Partnership (SEStran), which the SBC is a member of. The Strategy lays out the strategic vision for transport development in the south-east of Scotland up to 2025.

The key objectives relevant to renewable energy development are:

- Environment: to ensure that development is achieved in an environmentally sustainable manner; and
- Safety & Health: to promote a healthier and more active SEStran area population.

### 3.4 Policy and Guidance Summary

The Proposed Development can align with the stated traffic and transport policy objectives and the design of the Site and proposed mitigation measures will ensure compliance with national and local objectives.

## 4 Study Methodology

### 4.1 Introduction

There are three phases of the Proposed Development, which have been considered in this assessment and are as follows:

- the Construction Phase;
- the Operational Phase; and
- the Decommissioning Phase.

### 4.2 Project Phases – Transport Overview

Of the three phases, the construction phase is considered to have the greatest impact in terms of transport and potential impacts on the road network and sensitive receptors. Construction plant, bulk materials and wind turbine components will be transported to Site, potentially resulting in a significant increase in traffic on the study network.

The operational phase is restricted to occasional maintenance operations which generate significantly lower volumes of traffic that are not considered to be in excess of daily traffic variation levels on the road network.

The decommissioning phase involves fewer trips on the road network than the construction phase, as minor elements of infrastructure are likely to be left in place, adding to local infrastructure that can potentially be used for further agricultural or leisure uses in the future.

### 4.3 Scoping Discussions

The applicant submitted a request for a scoping opinion to the Scottish Ministers in respect of the EIA which included a section considering traffic and transport. A full review of that scoping opinion and other correspondence relating to the scope of the study including pre-application advice is provided in the Site Access, Traffic and Transport Chapter of the EIA Report (Volume 1: Chapter 10).



## 5 Baseline Conditions

### 5.1 Access Arrangement

The Proposed Development will be accessed via the existing Fallago Rig Wind Farm access junction on the B6456, to the east of Westruther in the Scottish Borders.

The access junction will provide access to the Site for all abnormal loads associated with the turbine deliveries, as well as access for Heavy Goods Vehicles (HGVs) delivering construction materials and general site traffic. An indicative layout of the proposed junction on the B6456 is presented in Appendix B.

Construction traffic associated with the development will generally approach from the west and all Abnormal Indivisible Load (AIL) traffic access from the Port of Entry (POE) at Rosyth, utilising the proven abnormal load route used during the construction of Fallago Rig Wind Farm.

### 5.2 Study Determination

The Study Area has been based on those roads that are expected to experience increased traffic flows associated with the construction of the Proposed Development. The geographic scope was determined through a review of the other developments in the area, Ordnance Survey (OS) plans and an assessment of the potential origin locations of construction staff and supply locations for construction materials.

Access for construction materials would be predominantly from the west via the A697 and B6456 through to the Site access junction. Where feasible, local materials will be sourced which will avoid traffic impacting on local communities as far as practicable.

As detailed above, the likely POE used for the discharging of turbine components will be the Port of Rosyth in Fife. AILs would route to the Site via the A720 Edinburgh City by-pass, A68, A697 and B6456. Full details of the AIL route are provided later in the report.

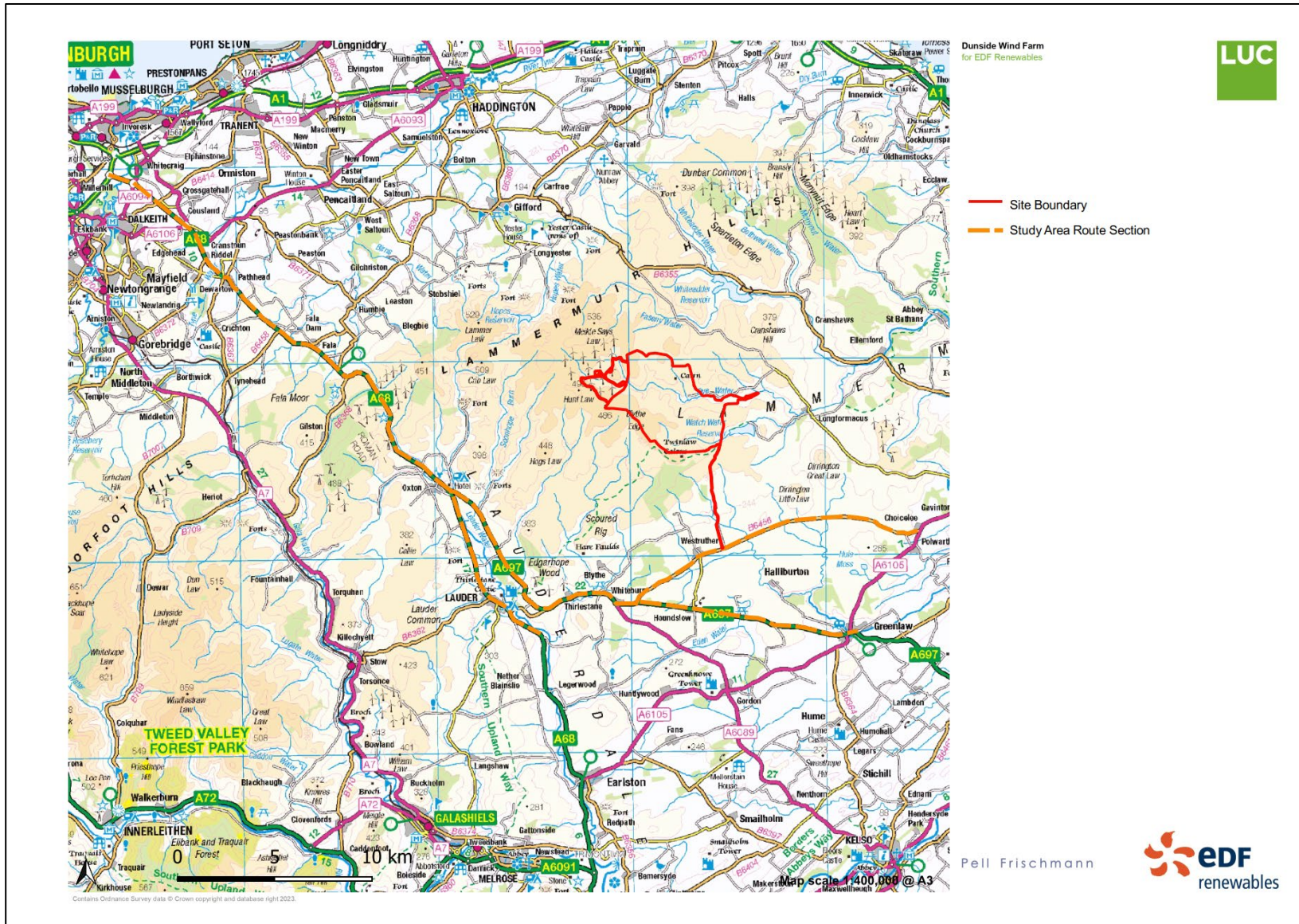
Based on the above, the Study Area for the assessment has therefore been assumed to be:

- A68 between the A720 and Lauder;
- A697 between Carfraemill and Greenlaw; and
- B6456 between Whiteburn and Choicelee.

Effects associated with construction traffic generated by the Proposed Development would be most pronounced in close proximity to the Site access junction and on the final approaches to the Site. As vehicles travel away from the Proposed Development, they would disperse across the wider road network, thus diluting any potential effects. It is therefore expected that the effects relating to construction traffic are unlikely to be significant beyond the Study Area identified above.

The Study Area is shown in Figure 5.

Figure 5 Transport Assessment Study Area



### 5.3 Pedestrian and Cyclist Networks

There are limited pedestrian facilities in the immediate vicinity of the Proposed Development Site, reflecting the rural nature of the Site. Those areas where pedestrian facilities are located are detailed below:

- there is a pedestrian footpath on both sides of the carriageway on the B6456 in Westruther, running between the Kirkpark junction and Westruther Primary School, for a distance of approximately 100 m;
- there is a pedestrian footway on the southern side of the A697 at Carfraemill, running from the A68 Carfraemill Roundabout, for a distance of approximately 470m; and
- there is a pedestrian footway on the eastern side of the A68 at Carfraemill, running from the A68 Carfraemill Roundabout, for a distance of approximately 140m.

Further away from the Proposed Development in the wider Study Area, there are pedestrian facilities within the larger settlements, including Lauder and Pathhead, where there are footways on one side or both sides of the carriageway. In addition, there are dedicated signal-controlled crossing points for pedestrians in both settlements.

The level of pedestrian infrastructure is commensurate with the scale of the local settlements and their rural setting.

A review of SBC's Core Path network<sup>1</sup> and the ScotWays Maps enclosed in the Scoping Response indicates that there are a number of Core Paths, Public Rights of Way (PRoW) and recreational routes both within the Site boundary and in the vicinity of the Proposed Development Site. A full assessment of these is included within the Outline Outdoor Access Management Plan, which is provided in EIA Report Volume 4: Appendices. Figure 6 below highlights those applicable routes, based on the ScotWays referencing codes, which identifies major paths, while the SBC network map breaks down the paths into smaller segments, which are detailed in Table 2.

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<sup>1</sup> The Scottish Borders Council, Countryside and Access Plan: <https://www.scotborders.gov.uk/mapadvanced>

Figure 6 Recreational Access Routes

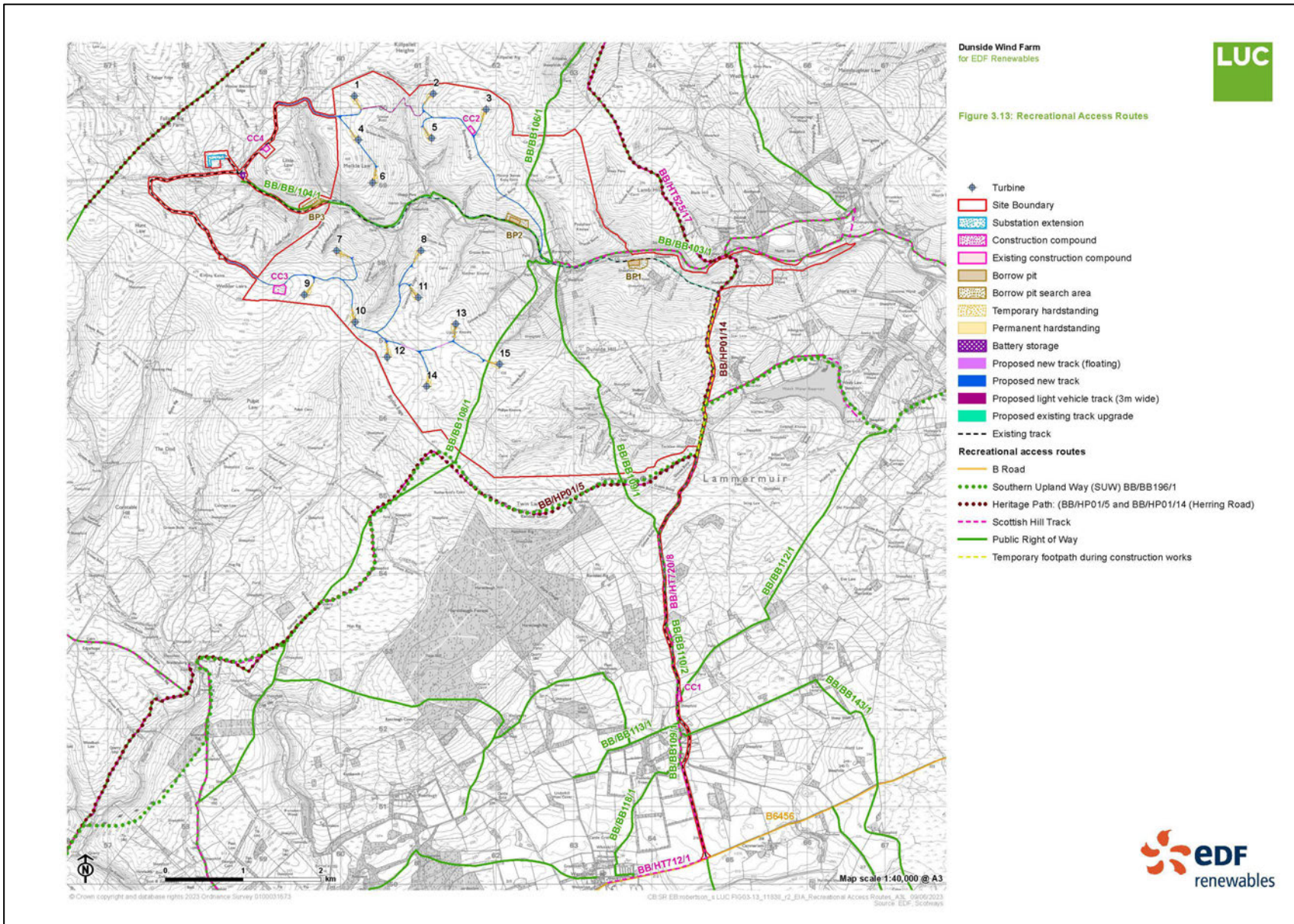


Table 2 Core Paths / Rights of Way / Recreational Routes

ScotWays Recreational Route Reference Codes (SBC Reference Code)	Location / Description
<b>Other Routes</b>	
Southern Upland Way (SUW) BB/196/1, BB/HP01/5 (LAUN/189/81, CREL/189R/8)	The Southern Upland Way is one of Scotland's Great Trails, running 341 km from Portpatrick on the west coast to Cockburnspath on the east. It is aligned along the south of the main development area, crossing from Braidshawrig 4.5km south of the Proposed Development, across Twin Law and along the northern side of the Watch Water Reservoir in the east. A section of the path falls within the Site boundary, where it shares a 700m section of the existing Fallago Rig access track, at Twinlaw Ford.  The nearest proposed turbine lies approx. 860 m north of the SUW approximately 1.4km west of Twin Law cairns.
<b>Heritage Paths</b>	
Herring Road Heritage Path No, BB/HP01/14 (CREL/BB110/3)	This track runs along the access track to the south-east of the Proposed Development.  The path is located about 2.5km south east of the nearest proposed turbine.
<b>Scottish Hill Tracks</b>	
Scottish Hill Track no. BB/HT525/17, BB/HP01/2. (CREL/BB105/1)	This PRoW (also listed as Heritage Path BB/HP01/2) is located to the north east of the Proposed Development Site, running in a north / south direction from Trottingshaw to the East Lothian Council boundary.
BB/HT712/1 (GOWE/82R/1, GOWE/82R/2, GOWE/80R/4)	Core Path link on main road (B6456), located to the south of the Proposed Development, running from the east of Eastfield to Westruther Primary School in Westruther.
BB/HT720/8, BB/BB110/2 (GOWE/82R/3, GOWE/82R/4) (GOWE/BB110/10, GOWE/BB110/3, GOWE/BB110/4, GOWE/BB110/5)	Access routes located to the south of the Proposed Development, running from the B6456 junction to Wedderlie House access junction, on the proposed access track.
<b>Public Rights of Way</b>	
BB/BB109/1 CREL/BB109/1, CREL/BB109/2, GOWE/BB109/1, GOWE/BB109/2)	Core Path runs from off the existing access track to the south, in a north westerly direction up through the Site ending at Byrecleugh. At the nearest point, this route is located about 850m from the closest turbine.
BB/BB113/1 (GOWE/82/3, GOWE/82/2)	Core Path, located to the south of the Proposed Development, running from Wedderlie Farmhouse for approximately 200 m, immediately to the west of the proposed access track.
BB/BB103/1 BB/BB104/1 (CREL/BB104/1) (CREL/BB103/1)	This PRoW runs east to west along the existing access route to Fallago Rig Wind Farm from Trottingshaw to Byrecleugh.
BB/BB106/1 (CREL/BB106/2, CREL/BB106/3)	This PRoW runs north to south past the mutiny stones (Scheduled Monument) to Byrecleugh within the site boundary.
BB/BB108/1 (CREL/BB108/1, CREL/BB108/2, CREL/BB108/3, CREL/BB108/4, CREL/BB108/5, CREL/BB108/6)	This PRoW runs from the Southern Upland Way approximately 1.1km northwest of the cairns on Twin Law to Byrecleugh crossing between Phillip Knowe and Upper Knowe.
BB/143/1 (GOWE/BB143/2)	This PRoW is located off the existing access track south of the Site, running in an east / west direction, intersecting the proposed access track at Wedderlie Farmhouse.
BB/BB112/1 (GOWE/BB112/1)	This PRoW is located south of the Proposed Development, running off the access route in Wedderlie towards Eve Law.
BB/118/1 (GOWE BB118/1)	This core path runs from Westruther joining the southern-most access track leading into the wind farm

A review of Sustrans' National Cycle Route (NCR) map<sup>2</sup> does not show any national cycle routes in the immediate vicinity of the Proposed Development Site or on the proposed construction access routes.

## 5.4 Road Access

Access to the existing Fallago Rig Wind Farm is taken from the D-Class Road, D52 which runs from its junction with the B6456 to the entrance to Wedderlie Farm Steading. The road is a single carriageway road of varying width and approximately 1.61 km in length. There are passing places located on the road, of varying standards. The road is maintained by SBC up to Wedderlie Farm Steading.

The B6456 is a single carriageway rural road, which runs in an east to west direction between Whiteburn and Choicelee, for a distance of approximately 16 km. The road has the national speed limit in place and is a good standard rural road. The B6556 passes through the settlement of Westruther where the speed limit drops to 20 miles per hour (mph).

The A697 is a single carriageway rural road, which runs from Carfraemill at the A86 to Morpeth, for a distance of approximately 38 km. On the sections of the road likely to be used by construction traffic, the national speed limit is in place. The A697 provides access to the aforementioned B6456, which in turn provides access to the Proposed Development Site.

The A68 Edinburgh to Newcastle Upon Tyne is a Trunk Road operated by Bear Scotland. The road runs from the grade separated junction with the A720 Edinburgh City By-pass in a south-eastwards direction for a distance of approximately 83 km to the Scotland / England border. The national speed limit is in place for the majority of its length, reducing to 20 or 30 mph in villages and settlements along its length.

A number of the roads within the Study Area form part of the agreed route network used for the extraction of timber and are therefore regularly used by HGV traffic. This includes the western extents of the B6456, the A697 and A86.

The Agreed Timber Route Map has been developed by The Timber Transport Forum who are a partnership of the forestry and timber industries, local government, national government agencies, timber hauliers and road and freight associations. One of the key aims of the forum is to minimise the impact of timber transport on the public road network, on local communities and the environment and a way of achieving this is to categorise the roads leading to forest areas in terms of their capacity to sustain the likely level of timber haulage vehicles i.e., HGVs. The routes are categorised into four groups, namely; 'Agreed Routes', 'Consultation Routes', 'Severely Restricted Routes' and 'Excluded Routes'.

'Agreed Routes' are categorised as routes used for timber haulage without restriction as regulated by the Road Traffic Act 1988. A-roads are classified as 'Agreed Routes' by default unless covered by one of the other road classifications. Those links classed as 'Consultation Routes' are categorised as a route which is key to timber extraction, but which are not up to 'Agreed Route' standard. Consultation with the local authority is required, and it may be necessary to agree limits of timing, allowable tonnage etc. before the route can be used. B-roads are classified as 'Consultation Routes' by default unless covered by one of the other classifications. 'Severely Restricted Routes' are not normally to be used for timber transport in their present condition. These routes are close to being Excluded Routes. Consultation with the local authority is required prior to use. Finally, 'Excluded Routes' should not be used for timber transport in their present condition. These routes are either formally restricted, or are close to being formally restricted, to protect the network from damaging loads.

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<sup>2</sup> <https://www.sustrans.org.uk/national-cycle-network>

## 5.5 Existing Traffic Conditions

In order to assess the impact of development traffic on the Study Area, two Automatic Traffic Count (ATC) sites were established in June / July 2022. The ATC surveys were conducted over a 7-day period, recording vehicle classifications, direction of travel and speeds. The count sites were as follows:

1. D52 Proposed Site Access Road (ATC); and
2. B6456 at Westruther (ATC).

In addition to the ATC data, further traffic count data was obtained from the UK Department for Transport (DfT) traffic database and TS database. With regards to the traffic data obtained from the DfT and TS databases, 2019 has been used, as these flows would be unaffected by Covid-related travel restrictions. DfT traffic data allow the traffic flows to be split into vehicle classes. The data was summarised into Cars/Light Goods Vehicles (LGVs) and HGVs (all goods vehicles >3.5tonnes gross maximum weight).

Traffic data has been used for the following locations:

3. A697 South of Addinston (Count site reference: 50934);
4. A68 North of Carfraemill (Count site reference: JTC00048);
5. A68 at Pathhead (Count site reference: 130754);
6. A68 North of Lauder (Count site reference: ATC00004); and
7. A697 at Greenlaw (Count site reference: 10871).

A National Road Traffic Forecast (NRTF) low growth factor was applied to both the ATC, TS and DfT survey data, to bring the traffic data up to the base year of 2023. The NRTF low growth factor for 2022 to 2023 is 1.005 and for 2019 to 2023 is 1.027.

These Sites were identified as being areas where sensitive receptors on the access routes would be located. A full receptor sensitivity and effect review is prepared in Volume 1, Chapter 10: Access, Traffic and Transport of the EIA Report

Figure 7 shows the location of the surveys, while Table 3 summarises the AADT traffic data collected and used in this assessment.

Figure 7 Traffic Count Locations

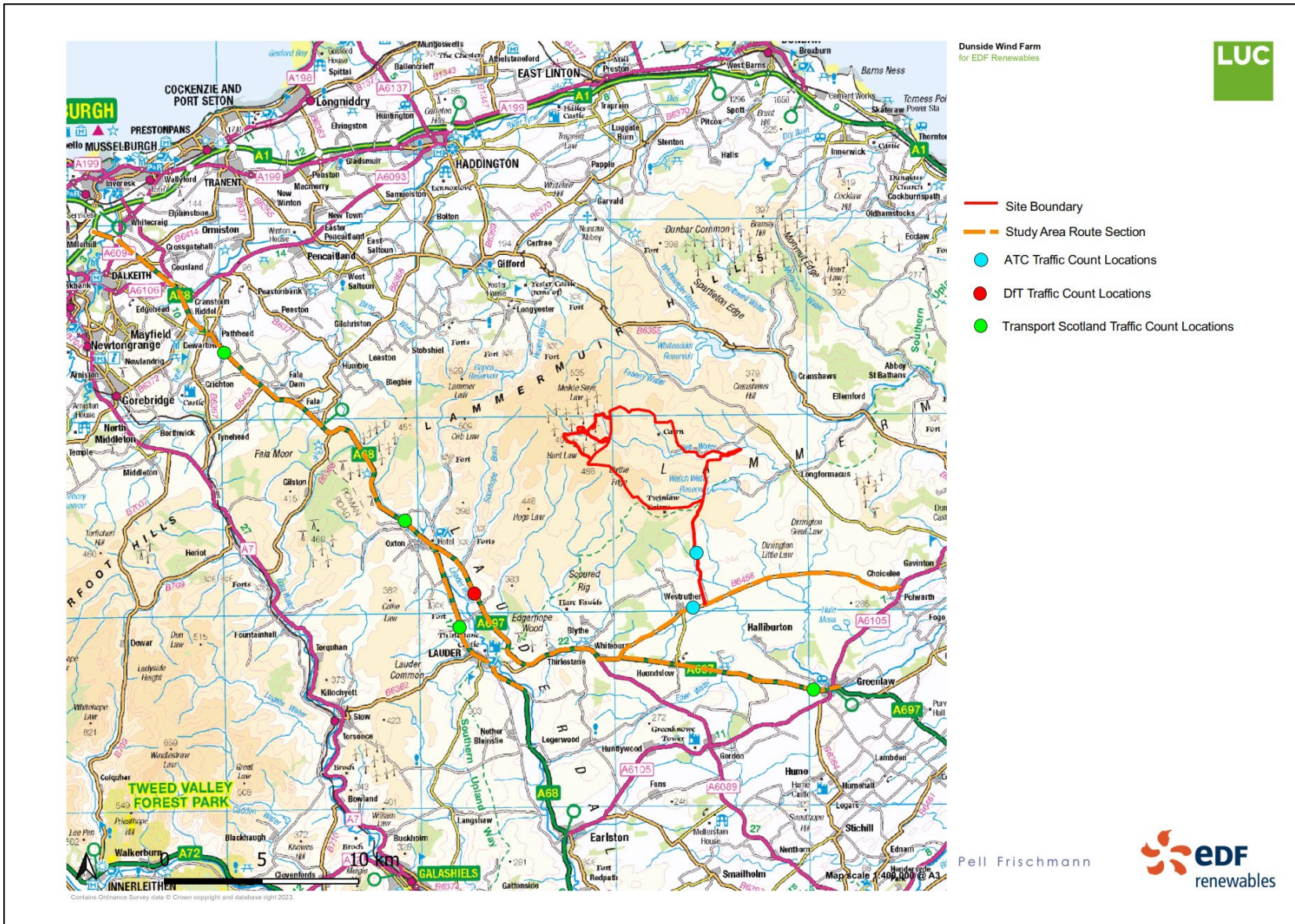




Table 3 24-hour Average Traffic Data (2023)

Survey Location	Cars / LGV	HGV	Total	% HGVs
D52 Proposed Site Access Road	62	39	101	38.6%
B6456 at Westruther	419	134	553	24.3%
A697 South of Addinston	2,591	268	2,859	9.4%
A68 North of Carfraemill	8,602	1,009	9,611	10.5%
A68 at Pathhead	9,359	994	10,353	9.6%
A68 North of Lauder	7,090	542	7,631	7.1%
A697 at Greenlaw	4,697	450	5,147	8.8%

Please note that variances may occur due to rounding.

As noted above the ATCs undertaken to inform the study also collected speed data and a summary of this can be seen in Table 4 below, together with the speed data from the TS database.

Table 4 Speed Summary

Survey Location	Data Source	Mean Speed (mph)	85%tile Speed (mph)	Speed Limit (mph)
D52 Proposed Site Access Road	ATC	36.1	45.0	60
B6456 at Westruther	ATC	26.8	33.8	20
A68 North of Carfraemill	Transport Scotland	45.9	52.7	60
A68 at Pathhead	Transport Scotland	27.1	30.9	30
A68 North of Lauder	Transport Scotland	24.4	29.2	20

The speed survey data indicates that on the B6456 in Westruther and the A68 north of Lauder, speed limits are not currently being adhered to. New permanent 20 mph speed limit were adopted at these locations in January 2023, following a 2 year trial period. This indicates that traffic management measures will be required at these locations for construction traffic. Furthermore Police Scotland may wish to consider enforcement spot checks in these areas as part of their wider road policing measures.

## 5.6 Accident Review

Personal Injury Accident (PIA) data for the five-year period covering 2017 to 2021 for the A697 and B6456 was obtained from the online resource CrashMap<sup>3</sup> which uses data collected by the police about road traffic crashes occurring on British roads, where someone is injured.

TA Guidance<sup>4</sup> requires an analysis of the PIA on the road network in the vicinity of any development to be undertaken for at least the most recent 3-year period, or preferably a 5-year period, particularly if the Site has been identified as being within a high accident area.

The statistics are categorised into three categories, namely "Slight", "Serious" and "Fatal", for those accidents that result in a death. The locations and severity of the recorded accidents within the Study Area are summarised in Table 5, while Figure 8 shows their locations.

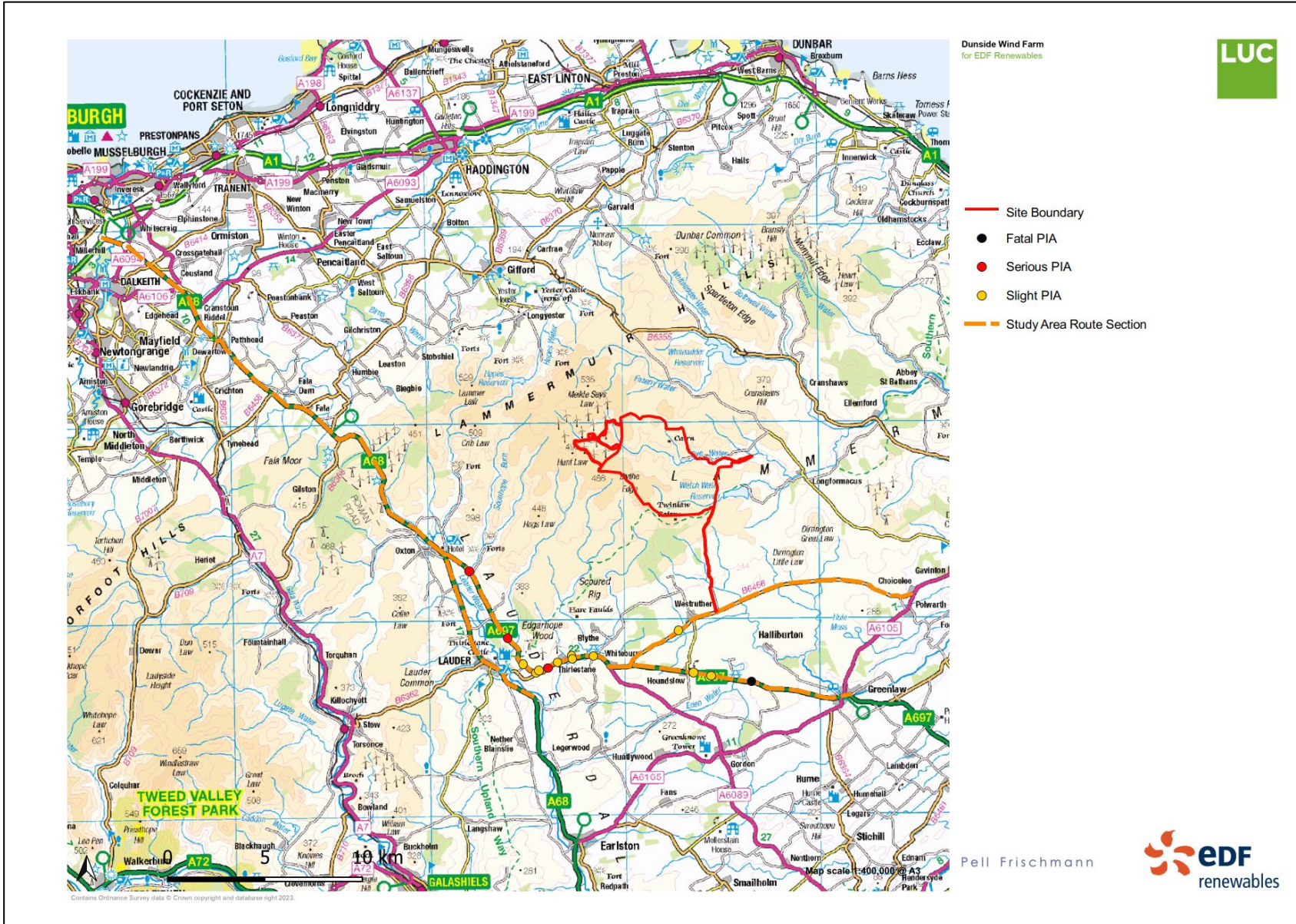
Table 5 Personal Injury Accident Summary

Survey Location	Slight	Serious	Fatal	HGV Incidents
B6456	1	0	0	-
A697	9	3	1	5 Slight & 1 Serious
<b>Total</b>	<b>10</b>	<b>3</b>	<b>1</b>	-
<b>Percentage</b>	<b>71.4%</b>	<b>21.4%</b>	<b>7.1%</b>	-

<sup>3</sup> <https://www.crashmap.co.uk/>

<sup>4</sup> [https://www.transport.gov.scot/media/4589/planning\\_reform\\_-\\_dpmtag\\_-\\_development\\_management\\_dpmtag\\_ref\\_\\_17\\_-\\_transport\\_assessment\\_guidance\\_final\\_-\\_june\\_2012.pdf](https://www.transport.gov.scot/media/4589/planning_reform_-_dpmtag_-_development_management_dpmtag_ref__17_-_transport_assessment_guidance_final_-_june_2012.pdf)

Figure 8 PIA Locations



A summary analysis of the incidents indicates that:

- A total of 14 PIAs were recorded within the Study Area within the last five-year period;
- Of those 14 PIAs, 10 were “Slight” (71.4%), 3 were “Serious” (21.4%) and 1 was “Fatal” (7.1%);
- The single ‘Fatal’ PIA involved a motorbike, no other vehicles were involved;
- No PIAs involved a pedestrian or cyclist;
- 6 of the recorded PIAs involved an HGV, 5 of these were ‘Slight’ and 1 was ‘Serious’;
- Young drivers (16-20) were involved in 3 accidents, all “Slight”;
- No accidents were recorded on the B6456 in the vicinity of the Site access junction; and
- 7 of the recorded PIAs occurred between the junction of the A697 / B6362 and Whiteburn, off these, 2 occurred at the aforementioned junction and the others occurred at bends on the carriageway.

Based on the information available, it has been established that there are no specific road safety issues within the immediate vicinity of the Proposed Development that currently require to be addressed or would be exacerbated by the construction of the Proposed Development.

## 5.7 Future Baseline Traffic Conditions

### 5.7.1 2026 Traffic Flows, excluding Committed Development Trips

Construction of the Proposed Development could commence during 2026 if consent is granted and is anticipated to take approximately 19 months depending on weather conditions and ecological considerations.

To assess the likely effects during the construction, base year traffic flows were determined by applying a NRTF low growth factor to the surveyed traffic flows. The NRTF low growth factor for 2023 to 2026 is 1.016. These factors were applied to the survey data to estimate the 2026 Base traffic flows, as shown in Table 6. This will be used in the Construction Peak Traffic Impact Assessment.

Table 6 24-hour Average Traffic Data (2026)

Survey Location	Cars / LGV	HGV	Total	% HGV
D52 Proposed Site Access Road	63	40	103	38.6%
B6456 at Westruther	425	136	562	24.3%
A697 South of Addinston	2,632	272	2,904	9.4%
A68 North of Carfraemill	8,739	1,025	9,765	10.5%
A68 at Pathhead	9,509	1,010	10,519	9.6%
A68 North of Lauder	7,203	550	7,753	7.1%
A697 at Greenlaw	4,772	458	5,230	8.8%

Please note that variances may occur due to rounding.

## 5.8 Committed Developments

### 5.8.1 Onshore Wind Farm and Energy Related Planning Applications

A review of the SBC online planning portal<sup>5</sup> and the Scottish Government’s Energy Consents Unit portal<sup>6</sup> was undertaken in the preparation of this assessment to identify any consented developments within the vicinity of the Proposed Development which would generate significant traffic and should be included within the assessment.

Transport Assessment guidance<sup>7</sup> advises that only those projects with extant planning permission or local development plan allocations within an adopted or approved plan require to be included in any assessment. Those projects in scoping or not yet determined should not be included in cumulative assessments as they

<sup>5</sup> <https://eplanning.scotborders.gov.uk/online-applications/search.do?action=simple&searchType=Application>

<sup>6</sup> <https://www.energyconsents.scot/ApplicationSearch.aspx?T=1>

<sup>7</sup> <https://www.gov.uk/guidance/travel-plans-transport-assessments-and-statements>

have yet to be determined. When considering traffic impacts specifically in relation to the construction phase of a project, the potential traffic impact is highly speculative and as such, cannot be included in the assessment.

Based on the above, two consented schemes were identified, namely Crystal Rig Wind Farm – Phase 4 (ECU000000607) and Howpark Farm Wind Farm (PPA-140-2060).

With regards to Crystal Rig Wind Farm – Phase 4: this was consented in March 2021 and there are no common access routes proposed to be used during the construction of the developments. Furthermore, construction is currently scheduled to begin in 2023 with an expected completion date in 2024. Based on the available information, no further consideration of this scheme is required in the assessment.

Howpark Farm Wind Farm: this was consented in April 2018 and there are no common access routes proposed to be used during the construction of the developments. Furthermore, construction is currently nearing completion. Based on the available information, no further consideration of this scheme is required in the assessment.

### 5.8.2 Other Planning Applications

A review of the SBC online planning portal was also undertaken for other any other developments with planning consent, which should be considered within this assessment. The review examined consented developments whose trips are considered significant in scale (i.e., has associated traffic impact of over 10%).

The review did not identify any other significant traffic generating developments in the Study Area that may occur during the construction period associated with the Proposed Development.

It should be noted that the use of Low NRTF growth assumptions has provided a basis for general local development growth within the Study Area.

## 6 Trip Generation and Distribution

### 6.1 Construction Phase

#### 6.1.1 Trip Derivation

During the 19-month construction period, the following traffic will require access to the Site:

- staff transport, in either cars or staff minibuses;
- construction equipment and materials, deliveries of machinery and supplies such as concrete and crushed rock;
- components relating to the battery storage element and associated infrastructure; and
- abnormal loads consisting of the wind turbine sections and a heavy lift crane.

Average monthly traffic flow data were used to establish the construction trips associated with the Proposed Development, based on the assumptions detailed in the following sections.

#### 6.1.2 Construction Staff

Staff would arrive in non-HGV vehicles and where possible will be encouraged to car share. The workforce on Site will depend on the activities undertaken, but, based on previous wind farm construction site experience for a project of this scale, it is considered that three staff per turbine during the short peak period of construction is likely, the maximum number of staff expected on Site could be in the order of 45 per day.

For the purposes of estimating traffic movements, it was assumed that 40% of staff would be transported by minibus and 60% would arrive by car (single car occupancy was assumed as the worst case at this stage with potentially fewer movements through car sharing).

Based on these assumptions, staff transport cars and light vehicles would account for a maximum of 40 vehicle trips (20 inbound trips and 20 outbound trips) per day during the peak period of construction.

#### 6.1.3 Abnormal Indivisible Load and Turbine Component Deliveries

The turbines are broken down into components for transport to the site. The nacelle, drive train, blade and tower sections are classified as AIL due to their weight, length, width and height when loaded. For the purposes of the report, the 'worst case' numbers of components requiring transport are illustrated in Table 7.

Table 7 Turbine Components

Components	Number of Components per turbine
Rotor Blades	3
Tower Sections	4
Nacelle	1
Hub	1
Drive Train	1
Nose Cone	1
Transformer	1
Ancillary	1
Site Parts	0.2

In addition to the turbine deliveries, up to two high-capacity erection cranes would be needed to offload a number of components and erect the turbines. The cranes are likely to be mobile cranes with a capacity up to 1,000 tonnes that are escorted by boom and ballast trucks to allow full mobilisation on Site. Smaller erector cranes would also be present to allow the assembly of the main cranes and to ease the overall erection of the turbines.

A total of 304 abnormal load movements are predicted, including cranes and it is expected that up to 3 AIL turbine components would be delivered per convoy. Up to 3 escort vehicles will be required with each convoy, resulting in an additional 304 movements (152 trips in and 152 trips out). Turbine components that do not classify as AILs, would be delivered in addition to these, resulting in a further 96 movements (48 trips in and 48 trips out). All of these deliveries are expected to occur over a period of approximately 6 months.

The escort vehicles have been assumed to be police cars and light goods vehicles. Motorcycles may be deployed, depending upon Police resources.

#### 6.1.4 General Deliveries

Throughout the construction phase, general deliveries will be made to Site via HGV. These would include fuel, Site office supplies and staff welfare etc. At the height of construction, it is assumed that up to 40 journeys to Site are made (20 in and 20 out) per month.

#### 6.1.5 Material Deliveries

Various materials will need to be delivered to Site to construct the site-based infrastructure. At the outset of the construction works, HGV deliveries will deliver plant and initial material deliveries to the Site to enable the formation of the site compound and to deliver construction machinery.

The Site is large enough to warrant onsite batching of concrete. All turbine and substation foundation concrete will be mixed on site, with deliveries of cement powder, water and sand being delivered by HGV tankers. For the purpose of this assessment, it is assumed that the cement powder and water will be delivered from concrete suppliers to the southwest, from local suppliers.

Sand and aggregate not sourced from on-site borrow pits will be delivered by tipper HGV and is expected to come from local quarries, located to the south. There are a number of potential suppliers including the following:

- Tarmac Craighouse Quarry at Earlston; and
- Blinkbonny Quarry, south of Gordon.

The estimated total volume of concrete required on Site is 16,610 m<sup>3</sup>, based upon expected turbine foundation, substation foundation and miscellaneous uses across the site. The individual deliveries associated with the raw materials have been estimated and result in inbound trips of 37 cement tankers, 350 sand and aggregate tippers, and 211 water tankers. It may be possible to extract all of aggregate for use in concrete production from borrow pits within the site, however 50% of the aggregate has been assumed in the assessment to present a worst-case scenario.

Foundation calculations for the turbine bases and the substations are detailed in Table 8 below.

Table 8 Steel Reinforcement Deliveries

Element	Weight / Installation (t)	Total Weight (t)	Lorry Capacity (t)	Inbound Trips	Total Journeys
Turbine Foundation	150 per turbine	2,250	30	75	150
Substation Foundation	873	873	30	30	60

The onsite access tracks and crane hardstands will be constructed from crushed rock and the material would be obtained from the site via the proposed borrow pits or when creating the cuttings and other earthworks.

The access tracks would generally be 6m in width and would be designed to accommodate 16tonne axle loads. In addition to the roads, crane pads will be constructed to enable the turbine erection process. The tracks, crane pads and compounds will require geotextile in the foundations.

To provide a robust assessment of potential traffic impact, it has been assumed that 50% of the material for tracks, hardstandings and compound areas will be imported to the Site. This represents an overestimate, with the expectation that the proposed on-site borrow pits will be more than adequate as a source for material. The assessment is therefore an over-estimate and is considered robust.

The estimate of imported material is detailed in Table 9.

**Table 9 Track Material Deliveries**

Element	Volume / Installation (m <sup>3</sup> )	Total Weight (t)	Lorry Capacity (t)	Inbound Trips	Total Journeys
Assumed 50% of required stone	5,4948	120,886	20	6,045	12,090

Geotextile will be delivered to Site in rolls. A total of 441 large rolls may be required at site and would be delivered by HGV which will result in 46 journeys (23 trips in and 23 trips out).

Cables would connect each turbine to the internal substation and control building. Trip estimates for the cable materials and ducting are provided below in Tables 10 to 12. Three cables are to be provided within each cable trench and would be backfilled with cable sand. Geotextiles would be used to shield the trench and ducting would be used to protect the cable when it runs under roadways. The cable materials will be delivered from suppliers to the north via the A68.

**Table 10 Cable Trip Estimate**

Element	Total Cable Length (m)	Length per Drum (m)	Number of Drums	Inbound Trips	Total Journeys
Cables	22,520	500	135	15	30

**Table 11 Cable Sand Trip Estimate**

Element	Volume (m <sup>3</sup> )	Total Weight (t)	Lorry Capacity (t)	Inbound Trips	Total Journeys
Cable Sand	7,601	12,162	20	609	1,218

**Table 12 Ducting Trip Estimate**

Element	Total Cable Length (m)	Length per Drum (m)	Number of Drums	Inbound Trips	Total Journeys
Ducting	750	5	150	8	16

One substation building extension will be constructed on the Site. This will require deliveries of building materials and structural elements and would result in 270 journeys (135 trips in and 135 trips out). Battery storage deliveries will result in a further 90 HGV journeys for battery, inverter and cabin / building deliveries etc.

The resulting traffic generation estimates have been plotted onto the indicative construction programme to illustrate the peak journeys on the network. Table 13 illustrates the trip generation throughout the construction programme.

**Table 13 Construction Traffic Profile**

Activity	Class	Month													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
Site Establishment & Remediation	HGV	80	80	80											
General Site Deliveries	HGV	40	40	40	40	40	40	40	40	40	40	40	40	40	40
Bulk Material Deliveries	HGV		1,209	1,209	1,209	1,209	1,209	1,209	1,209	1,209	1,209	1,209			
Plant Deliveries	HGV	40	40	20											
Concrete Batching Deliveries	HGV							119	119	119	119	119	119	119	119
Reinforcement	HGV							35	35			35	35		
Cable & Ducting Deliveries	HGV												8	8	8
Cabling Sand	HGV												203	203	203
Geotextile Deliveries	HGV			8	8			8	8			8	8		
Substation & Energy Storage	HGV														45
AIL Cranage	HGV											20	20		
AIL Deliveries	HGV											66	66	66	66
AIL Escorts	Car & LGV											51	51	51	51
Battery Storage	HGV												15	15	15
Commissioning	Car & LGV														
Staff	Car & LGV	264	440	440	660	660	880	880	880	880	880	880	880	880	880
Total HGV	HGV	160	1,369	1,357	1,257	1,249	1,249	1,411	1,411	1,368	1,368	1,497	514	451	496
Total Cars / LGV	Car & LGV	264	440	440	660	660	880	880	880	880	880	931	931	931	931
Total Movements		424	1,809	1,797	1,917	1,909	2,129	2,291	2,291	2,248	2,248	2,428	1,444	1,382	1,427
Total HGV per Day		7	62	62	57	57	57	64	64	62	62	68	23	20	23
Total Cars / LGV per Day		12	20	20	30	30	40	40	40	40	40	42	42	42	42
Total per Day		19	82	82	87	87	97	104	104	102	102	110	66	63	65

Please note variances due to rounding may occur  
Continued overleaf



Activity	Class	Month				
		15	16	17	18	19
Site Establishment & Remediation	HGV			80	80	80
General Site Deliveries	HGV	40	40	40	40	40
Bulk Material Deliveries	HGV					
Plant Deliveries	HGV			40	40	20
Concrete Batching Deliveries	HGV	119	119			
Reinforcement	HGV	35	35			
Cable & Ducting Deliveries	HGV	8	8	8		
Cabling Sand	HGV	203	203	203		
Geotextile Deliveries	HGV					
Substation & Energy Storage	HGV	45	45	45	45	45
AIL Cranage	HGV		20	20		
AIL Deliveries	HGV	66	66			
AIL Escorts	Car & LGV	51	51			
Battery Storage	HGV	15	15	15		
Commissioning	Car & LGV			40	40	40
Staff	Car & LGV	880	880	880	440	264
Total HGV	HGV	531	551	451	205	185
Total Cars / LGV	Car & LGV	931	931	920	480	304
Total Movements		1,462	1,482	1,371	685	489
Total HGV per Day		24	25	20	9	8
Total Cars / LGV per Day		42	42	42	22	14
Total per Day		66	67	62	31	22

*Assumes that 50% of total estimated stone aggregate requirements will be imported to site.  
Please note minor variances due to rounding may occur.*

The peak of construction occurs in Month 11 with a total of 110 daily journeys (42 Car / Lights and 68 HGV journeys).

#### 6.1.6 Distribution of Construction Trips

The distribution of Proposed Development construction traffic on the network would vary depending on the types of loads being transported. The assumptions for the distribution of construction traffic during the peak months are as follows:

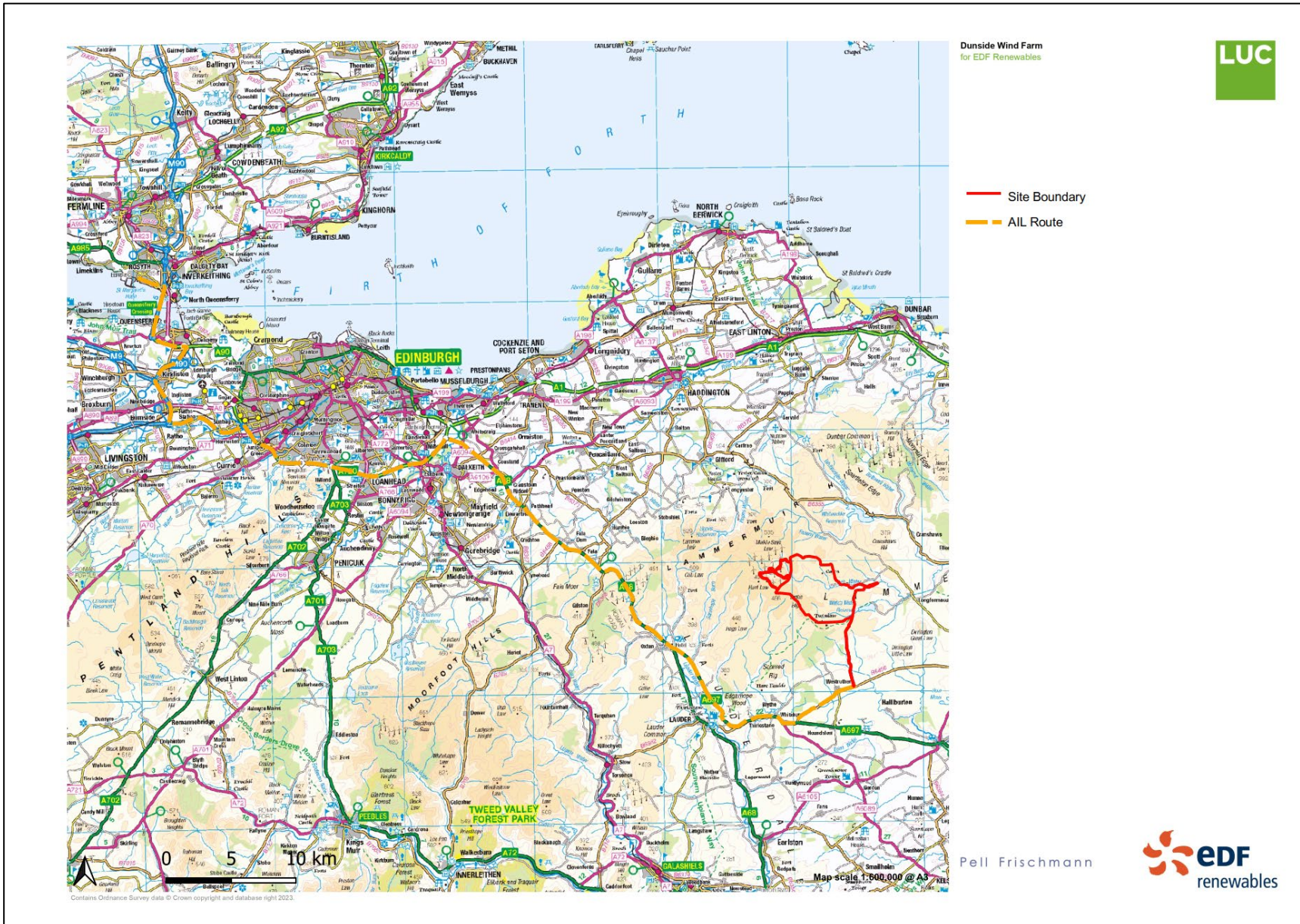
- all construction traffic enters the Site via the existing Fallago Rig access junction on the B6456;
- deliveries associated with concrete materials, such as cement powder and water, will be sourced from local concrete suppliers, which for the purpose of this assessment will originate from the A68, B6362, A697 and B6456;
- whilst it is anticipated that onsite borrow pits will be able to meet aggregate requirements, for the purpose of this assessment it is proposed that 50% of track and hardstanding aggregate requirements will be sourced from local quarries, which for the purpose of this assessment will originate from the A68, B6362, A697 and B6456. The BoP contractor will confirm final quarry and material sourcing with SBC in the final CTMP;
- HGV deliveries associated with cabling and associated materials, etc. will arrive via the A68, A697 and B6456;
- staff working at the Site are likely to be based locally. It is assumed that 45% will come from the A68 to the north, 45% from the south, and 10% from the A697 to the southeast; and
- general Site deliveries will be split via the A68, A697 and B6456 from the west (70%) and via the A697 and B6465 from the east.

For the purposes of preparing Volume 1, Chapter 10: Access, Traffic and Transport and this TA, it has been assumed that all abnormal load traffic will access from the Proposed Development Site via the following route:

- loads will exit the port onto Keith Road and will then proceed eastbound;
- loads will then merge onto the B981 before turning right onto the M90 southbound;
- loads will continue southbound on the M90 until the Interchange with the M9 and M9 Junction 1a;
- loads will merge onto the M8 at Newbridge and will proceed towards Edinburgh until Hermiston Gait, where they will turn right and join the A720 Edinburgh City Bypass;
- loads will continue eastbound on the length of the A720 before exiting at the Millerhill Junction;
- loads will proceed southbound on the A68 until Carfraemill when they will turn left onto the A697 eastbound;
- loads will turn left onto the B6456 and proceed through Westruther; and
- to the east of Westruther, loads will turn left onto the D52. From here, loads will proceed northbound before turning right into the existing Site access junction.

The above route is shown in Figure 9.

Figure 9 AIL Component Delivery Route



The above route has been considered in full, within the AIL Route Survey Report (RSR), provided in Appendix A.

### 6.1.7 Peak Construction Traffic

Following the distribution and assignment of traffic flows to the Study Area network, the resultant daily traffic during the peak of construction are summarised in Table 14.

**Table 14 Peak Construction Traffic**

Survey Location	Cars / LGV	HGV	Total	%HGV
D52 Proposed Site Access Road	42	68	110	61.7%
B6456 at Westruther	42	68	110	61.7%
A697 South of Addinston	38	8	46	17.3%
A68 North of Carfraemill	20	8	28	28.3%
A68 at Pathhead	20	8	28	28.3%
A68 North of Lauder	18	62	80	77.5%
A697 at Greenlaw	4	2	6	33.3%

*Please note that variances may occur due to rounding.*

## 6.2 Decommissioning Phase

Prior to decommissioning of the Site, a traffic assessment would be undertaken, and appropriate traffic management procedures followed.

The decommissioning phase would result in fewer trips on the road network than the construction or operational phases as it is considered likely that elements of infrastructure such as access tracks would be left in place and structures may be broken up on Site to allow transport by a reduced number of HGVs.

## 7 Traffic Impact Assessment

### 7.1 Construction Impact

The peak month traffic data was combined with the future year (2026) traffic data to allow a comparison between the baseline results to be made. The increase in traffic volumes is illustrated in percentage increases for each class of vehicle. This is illustrated in Table 15.

**Table 15 Peak Construction Traffic Network Impact**

Survey Location	Cars / LGV	HGV	Total	Cars / LGV % Increase	HGV % Increase	Total % Increase
D52 Proposed Site Access Road	105	108	213	67.2%	171.6%	107.5%
B6456 at Westruther	468	204	672	9.9%	49.9%	19.6%
A697 South of Addinston	2,671	280	2,951	1.5%	2.9%	1.6%
A68 North of Carfraemill	8,760	1,033	9,793	0.2%	0.8%	0.3%
A68 at Pathhead	9,529	1,018	10,547	0.2%	0.8%	0.3%
A68 North of Lauder	7,221	612	7,833	0.2%	11.3%	1.0%
A697 at Greenlaw	4,776	460	5,236	0.1%	0.4%	0.1%

The total traffic movements are predicted to increase by 107.5% on the D52 Proposed Access Road, which leads from the B6456. On the rest of the public road network, the highest total traffic increase is 19.6%, which occurs on the B6456.

The total HGV traffic movements will increase by 171.6% the D52 Proposed Access Road, and whilst this increase could be considered high, it is generally caused by the relatively low HGV flows on the road at this location. On the rest of the public road network, the highest total traffic increase is 49.9%, which occurs on the B6456.

It should be noted the construction phase is transitory in nature and the peak of construction activities is short lived, occurring over a relatively short timeframe when taking account of the whole construction programme.

A review of existing theoretical road capacity has been undertaken using the Design Manual for Roads and Bridges, Volume 15, Part 5 "The NESAs Manual". The theoretical road capacity has been estimated for each of the road links for a 12-hour period that makes up the Study Area. The results are summarised in Table 16.

**Table 16 Theoretical Road Capacity**

Survey Location	2026 Baseline Flow (total traffic)	2026 Base + Development Flows (total traffic)	Theoretical Road Capacity (12hr)	Spare Road Capacity %
D52 Proposed Site Access Road	103	213	3,360	93.7%
B6456 at Westruther	562	672	21,600	96.9%
A697 South of Addinston	2,904	2,951	21,600	86.3%
A68 North of Carfraemill	9,765	9,793	28,800	66.0%
A68 at Pathhead	10,519	10,547	28,800	63.4%
A68 North of Lauder	7,753	7,833	28,800	72.8%
A697 at Greenlaw	5,230	5,236	21,600	75.8%

The results indicate there are no road capacity issues with the addition of construction traffic associated with the Proposed Development and significant spare capacity exists within the trunk and local road network to accommodate all construction phase traffic.

## 8 Proposed Traffic Mitigation Measures

### 8.1 Construction Phase

#### 8.1.1 Construction Traffic Management Plan (CTMP)

During the construction period, a project website, blog or Twitter feed would be regularly updated to provide the latest information relating to traffic movements associated with vehicles accessing the site. This would be agreed with SBC.

The following measures would be implemented during the construction phase through the CTMP:

- Agree AIL route modifications and improvements with SBC and other relevant stakeholders. Works which will be required to facilitate turbine deliveries are outlined in the respective delivery route options RSR, which are presented in Appendix A;
- Where possible, the detailed design process would minimise the volume of material to be imported to Site to help reduce HGV numbers;
- A site worker transport and travel arrangement plan, including transport modes to and from the worksite (including pick up and drop off times);
- A Transport Management Plan for AIL deliveries;
- All materials delivery lorries (dry materials) should be sheeted to reduce dust and stop spillage on public roads;
- Specific training and disciplinary measures should be established to ensure the highest standards are maintained to prevent construction vehicles from carrying mud and debris onto the carriageway;
- Wheel cleaning facilities may be established at the site entrance, depending on the views of SBC;
- Normal site working hours would be limited to between 0700 and 1900 (Monday to Friday) and 0700 and 1300 (Saturday), though component delivery and turbine erection may take place outside these hours;
- Appropriate traffic management measures would be put in place on the B6456 and unclassified road leading through to the Site, to avoid conflict with general traffic, subject to the agreement of SBC. Typical measures would include HGV turning and crossing signs and/ or banksmen at the site access and warning signs;
- Provide construction updates on the project website and or a newsletter to be distributed to residents within an agreed distance of the site;
- Adoption of a voluntary reduced speed limits at locations to be agreed with SBC;
- All drivers would be required to attend an induction to include:
  - A toolbox talk safety briefing;
  - The need for appropriate care and speed control;
  - A briefing on driver speed reduction agreements (to slow site traffic at sensitive locations through the villages); and
  - Identification of the required access routes and the controls to ensure no departure from these routes.

SBC are likely to request that an agreement to cover the cost of abnormal wear on its road network is made.

Video footage of the pre-construction phase condition of the abnormal loads access route and the construction vehicles route would be recorded to provide a baseline of the condition of the road prior to any construction work commencing. This baseline would provide evidence of any change in the road condition during the construction phase. Any necessary repairs would be coordinated with SBC's roads team. Any damage caused by traffic associated with the proposed development during the construction period, that would be hazardous to public traffic, would be repaired immediately.

Damage to road infrastructure caused directly by construction traffic would be remediated, and street furniture that is removed on a temporary basis would be fully reinstated.

There would be a regular road review, and any debris and mud would be removed from the carriageway using an onsite road sweeper to ensure road safety for all road users.

Before the AILs traverse the route, the following tasks would be undertaken to ensure load and road user safety:

- Ensure any vegetation which may foul the loads is trimmed back to allow passage;
- Confirm there are no roadworks or closures that could affect the passage of the loads;
- Check no new or diverted underground services on the proposed route are at risk from the abnormal loads; and
- Confirm the police are satisfied with the proposed movement strategy.

## 8.2 Abnormal Load Transport Management Plan

There are a number of traffic management measures that could help reduce the effect of abnormal load convoys.

All abnormal load deliveries would be undertaken at appropriate times (to be discussed and agreed with the local authority and police) with the aim to minimise the effect on the local road network. It is likely that the abnormal load convoys would travel in the early morning periods before peak times while general construction traffic would generally avoid the morning and evening peak periods.

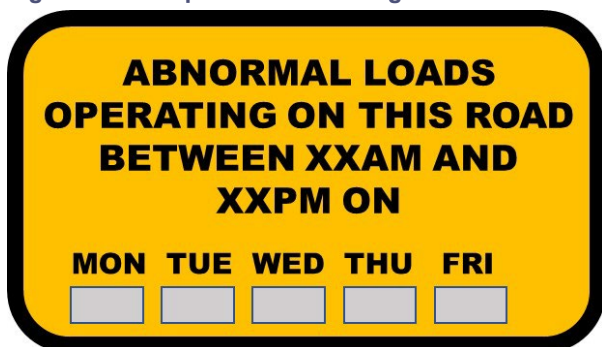
The majority of potential conflicts between construction traffic and other road users will occur with abnormal load traffic. General construction traffic is not likely to come into conflict with other road users as the vehicles are smaller and road users are generally more accustomed to them.

Potential conflicts between the abnormal loads and other road users can occur at a variety of locations and circumstances. The main potential conflicts are likely to occur:

- on sections of single carriageway road, for example on the A697 at Westruther and B6456;
- at locations where there are significant changes in the horizontal alignment of the carriageway, requiring the loads to use the full carriageway width;
- where traffic turns at a road junctions, requiring other traffic to be restrained on other approach arms; and
- in locations where high speeds of general traffic are predicted.

Advance warning signs would be installed on the approaches to the affected road network. Information signage could be installed to help assist drivers and an example is illustrated in Figure 10. Flip up panels (shown in grey) would be used to mask over days where convoys would not be operating. When no convoys are moving, the sign would be bagged over by the Traffic Management contractor.

Figure 10 Example Information Sign



This signage will assist in helping improve driver information and allow other road users to consider alternative routes or times for their journey (where such options exist).

The location and numbers of signs would be agreed post consent and would form part of the Traffic Management Proposal for the project.

The Abnormal Load Transport Management Plan would also include:

- procedures for liaising with the emergency services to ensure that police, fire and ambulance vehicles are not impeded by the loads. This is normally undertaken by informing the emergency services of delivery times and dates and agreeing communication protocols and lay over areas to allow overtaking;
- a diary of proposed delivery movements to liaise with the communities to avoid key dates such as local events;
- a protocol for working with local businesses to ensure the construction traffic does not interfere with deliveries or normal business traffic; and
- proposals to establish a construction liaison group to ensure the smooth management of the project / public interface with the applicant, the construction contractors, the local community, and if appropriate, the police forming the committee. This committee would form a means of communicating and updating on forthcoming activities and dealing with any potential issues arising.

### 8.3 Public Information

Information on the turbine convoys would be provided to local media outlets such as local papers and local radio to help assist the public.

Information would relate to expected vehicle movements from the port of entry through to the Site access junction. This will assist residents becoming aware of the convoy movements and may help reduce any potential conflicts.

The applicant would also ensure information was distributed through its communication team via the project website, local newsletters, and social media.

### 8.4 Convoy System

A police escort would be required to facilitate the delivery of the predicted AILs. The police escort would be further supplemented by a civilian pilot car to assist with the escort duty. It is proposed that an advance escort would warn oncoming vehicles ahead of the convoy, with one escort staying with the convoy at all times. The escorts and convoy would remain in radio contact at all times where possible.

The abnormal loads convoys would be no more than three AILs long, or as advised by the police, to permit safe transit along the delivery route and to allow limited overtaking opportunities for following traffic where it is safe to do so.

The times in which the convoys would travel will need to be agreed with Police Scotland who have sole discretion on when loads can be moved.

### 8.5 Onsite Measures delivered using a Path Management Plan (PMP)

Within the Site, consideration has been given to pedestrians and cyclists alike due to potential interactions between construction traffic and users of the paths and public roads. If required, a Path Planning Study will be conducted post consent and will be secured through a planning condition. Findings from the study will be used to formulate a set of measures into a Path Management Plan (PMP), while an Outline Outdoor Access Management Plan, is provided in EIA Report Volume 4: Appendices.

Users of the Rights of Way will be separated from construction traffic through the use of barriers. Crossing points will be provided where required, with path users having right of way. Appropriate Traffic Signs Manual Chapter 8 compliant temporary road signage would be provided to assist at these crossing for the benefit of all users.



The principal contractor will ensure that speed limits are always adhered to by their drivers and associated subcontractors. This is particularly important within close proximity to the Core Paths, Rights of Way and at crossing points. Advisory speed limit signage will also be installed on approaches to areas where path users may interact with construction traffic.

Signage will be installed on the Site exits that makes drivers aware of local speed limits and reminding drivers of the potential presence of pedestrians and cyclists in the area. This will also be emphasised in the weekly toolbox talks.

With regards to the possible interaction with horses on and in the vicinity of the Proposed Development, a scoping response has been received from The British Horse Society. Consideration will therefore be given to the implementation of measures to mitigate any potential issues between construction traffic and horse riders. Horses are normally nervous of large vehicles, particularly when they do not often meet them. Horses are flight animals and will run away in panic if really frightened. Riders will do all they can to prevent this but, should it happen, it could cause a serious accident for other road users, as well as for the horse and rider.

The main factors causing fear in horses in this situation are:

- Something approaching them, which is unfamiliar and intimidating;
- A large moving object, especially if it is noisy;
- Lack of space between the horse and the vehicle;
- The sound of air brakes; and
- Anxiety on the part of the rider.

The British Horse Society has previously recommended the following actions that will be included in the site training for all HGV staff:

- On seeing riders approaching, drivers must slow down and stop, minimising the sound of air brakes, if possible;
- If the horse still shows signs of nervousness while approaching the vehicle, the engine should be shut down (if it is safe to do so);
- The vehicle should not move off until the riders are well clear of the back of the HGV;
- If drivers are wishing to overtake riders, please approach slowly or even stop in order to give riders time to find a gateway or lay by where they can take refuge and create sufficient space between the horse and the vehicle. Because of the position of their eyes, horses are very aware of things coming up behind them; and
- All drivers delivering to the site must be patient. Riders will be doing their best to reassure their horses while often feeling a high degree of anxiety themselves.

## 8.6 A Staff Travel Plan

A Staff Travel Plan will be deployed where necessary, to manage the arrival and departure profile of staff and to encourage sustainable modes of transport, especially car-sharing. A package of measures could include:

- Appointment of a Travel Plan Coordinator (TPC);
- Provision of public transport information;
- Mini-bus service for transport of site staff;
- Promotion of a car sharing scheme; and
- Car parking management.

## 8.7 Operational Phase Mitigation

Site entrance roads will be well maintained and monitored during the operational life of the Proposed Development. Regular maintenance will be undertaken to keep the Site access track drainage systems fully operation and to ensure there are no run-off issues onto the public road network.

## 9 Summary & Conclusions

Pell Frischmann Consultants has been commissioned by LUC Limited on behalf of EDF Energy Renewables Ltd (the Applicant), to undertake a Transport Assessment for the Proposed Development, located in the Lammermuir Hills, within the administrative boundary of the Scottish Borders Council.

The Site will be accessed from the B6456 via the existing Fallago Rig Wind Farm access road.

Existing traffic data established a base point for determining the impact during the construction phase and was factored to future levels to help determine the effect of construction traffic on the local road network.

The construction traffic would result in a temporary increase in traffic flows on the road network surrounding the Proposed Development. The maximum traffic effect associated with construction of the Proposed Development is predicted to occur in Month 11 of the construction programme. During this month, an average of 68 HGV movements is predicted per day and it is estimated that there would be a further 42 car and light van movements per day to transport construction workers to and from the Site.

A series of mitigation measures and management plans have been proposed to help mitigate and offset the impacts of both the construction and operational phase traffic flows. It is considered that these can be secured by condition with SBC.

No link capacity issues are expected on any of the roads assessed due to the additional movements associated with the Proposed Development. The effects of construction traffic are temporary in nature and are transitory.

## Appendix A Route Survey Report

Pell Frischmann

Dunside Wind Farm

Abnormal Indivisible Load Route Survey

June 2023

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<b>Rev</b>	<b>Suit</b>	<b>Description</b>	<b>Date</b>	<b>Originator</b>	<b>Checker</b>	<b>Approver</b>
01		Draft	26-05-2022	S Kolozsvari	T Lockett	G Buchan
02		Client Comments	06-06-2023	G.Smith	T Lockett	G Buchan

Ref. reference. Rev revision. Suit suitability.

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# 1 Introduction

## 1.1 Purpose of the Report

Pell Frischmann (PF) has been commissioned by EDF Energy Renewables (EDF) to undertake a route survey review of potential delivery routes for wind turbine Abnormal Indivisible Loads (AIL) associated with the construction and development of Dunside Wind Farm, located to the north of Westruther.

The Route Survey Report (RSR) has been prepared to help inform EDF on the likely issues associated with the development of the site with regards to off-site transport and access for AIL traffic from Rosyth to site. The report identifies the key issues associated with AIL deliveries and notes that remedial works, either in the form of physical works or as traffic management interventions will be required to accommodate the predicted loads.

The detailed assessment and subsequent designs of any remedial works are beyond the agreed scope of works between PF and EDF at this point in time.

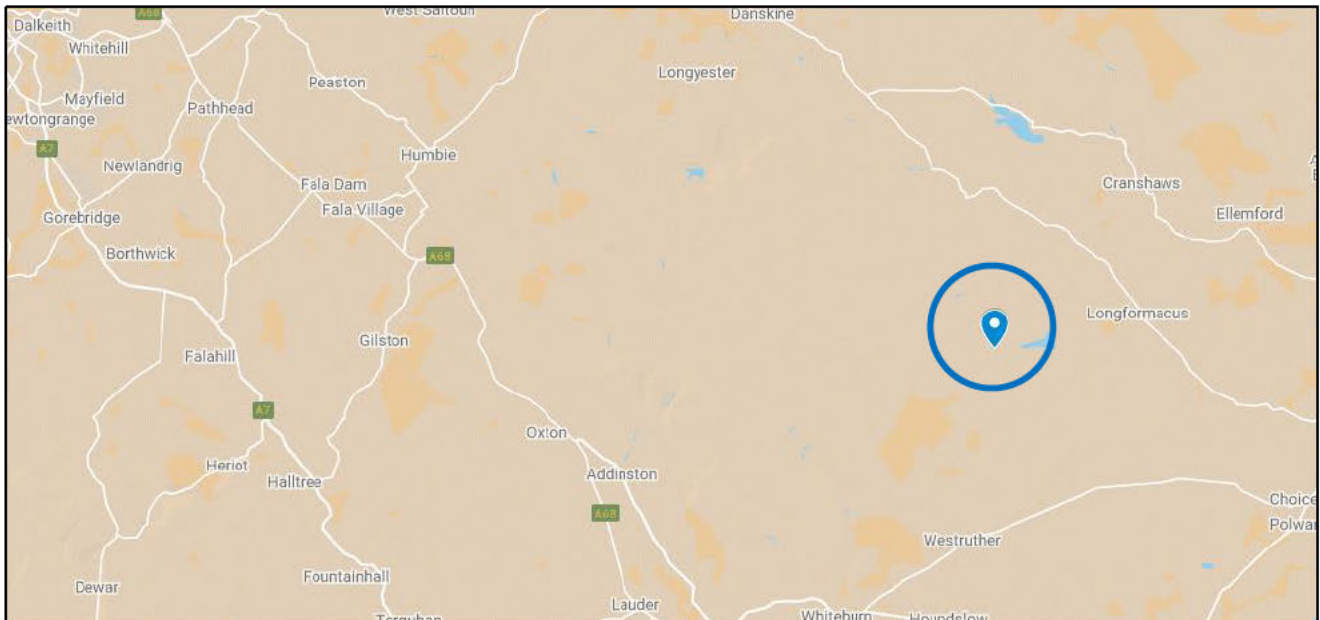
It is the responsibility of the developer to ensure that the entirety of the proposed access route is suitable and meets with their satisfaction. The developer will be responsible for ensuring that the finalised proposals meet with the appropriate levels of health and safety provision for all road users and is in accordance with the relevant legislation at the time of delivery.

## 2 Site Background

### 2.1 Site Location

The development site is located north of Westruther on the border of East Lothian and the Scottish Borders. Figure 2-1 illustrates the general site location.

Figure 2-1: Site Location Plan



### 2.2 Candidate Turbine

EDF have indicated that they wish to consider the worst-case components from a Siemens SG170 turbine.

The details of the components have been provided by Siemens and are detailed in Table 2-1. These feature the UK tower design option, designed to keep tower diameters for hub heights in excess of 200m below 4.8m diameter.

Table 2-1: Turbine Components Summary

Component	Length (m)	Width (m)	Height / Min Diameter (m)	Weight (t)
Blade	83.741	4.186	3.500	29.000
Mid Tower 1	18.200	4.700	4.436	84.328
Mid Tower 2	23.800	4.436	4.427	84.548
Mid Tower 3	26.880	4.427	4.021	71.771
Top Tower	29.970	4.021	3.503	63.863

### 2.3 Proposed Delivery Equipment

To provide a robust assessment scenario based upon the known issues along the access route, it has been assumed that all blades would be carried on a Dolly Clamp trailer to reduce the need for mitigation in constrained sections of the route.

Where constraints are significant, blades would be transferred onto a ten-axle blade lifting trailer to reduce the amount of additional land required and to reduce the extents of associated physical improvements. This trailer can lift blades up to a maximum angle of 60 degrees to clear potential constraints and an example is illustrated in Figure 2-3.



The base and mid towers would be carried on a 4+7 clamp trailer. The hub, nacelle housing, and top towers would be carried on a six-axle step frame trailer.

**Figure 2-2: Dolly Clamp Trailer**



**Figure 2-3: Blade Lifter Trailer**



Figure 2-4: Tower Trailer



## 3 Access Route Review

### 3.1 Port of Entry

The proposed Port of Entry (POE) is Rosyth, Fife. The port is the closest port to site and as such is in line with the Government's "Water Preferred" policy towards AIL movements. The port has been used by renewables deliveries in the past for a number of wind farms, although these have utilised smaller loads than those that are proposed by Vestas. The port has sufficient quay and storage space and is well located for the strategic trunk road network.

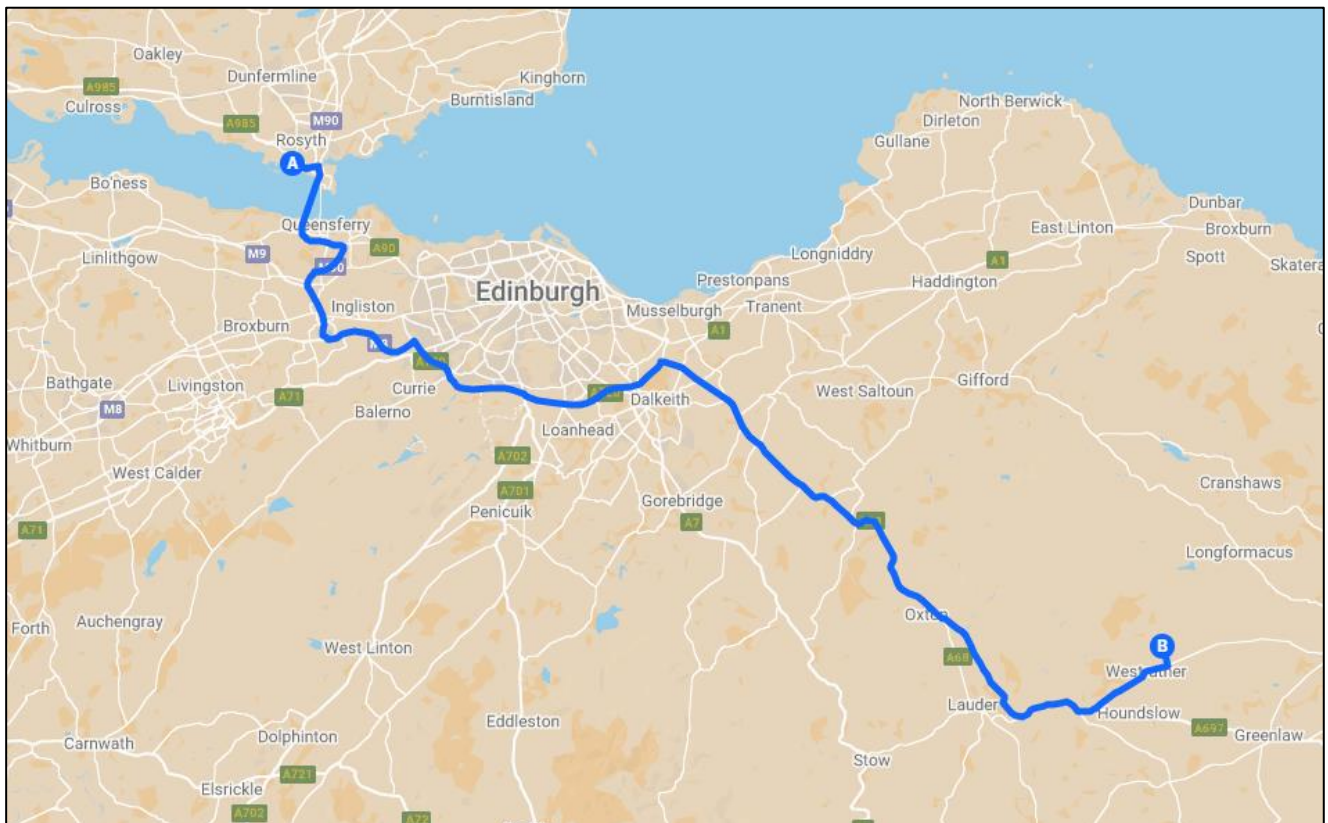
### 3.2 Proposed Access Route

The proposed access route from Rosyth Port to site is as follows:

- Loads would exit the port onto Keith Road and would then proceed eastbound;
- Loads would then merge onto the B981 before turning right onto the M90 southbound;
- Loads would continue southbound on the M90 until the Interchange with the M9 and M9 Junction 1a;
- Loads would merge onto the M8 at Newbridge and would proceed towards Edinburgh until Hermiston Gait, where they would turn right and would join the A720 Edinburgh City Bypass;
- Loads would continue eastbound on the length of the A720 before exiting at the Millerhill Interchange;
- Loads would proceed southbound on the A68 until Carfraemill when they would turn left onto the A697 eastbound;
- Loads would turn left onto the B6456 and would proceed through Westruther;
- To the east of Westruther, loads would turn left onto an unclassified road. From here, loads would proceed northbound before turning right into the existing site access junction.

The proposed access route is illustrated in Figure 2-4.

Figure 3-1: Access Route







### 3.3 Route Constraints



The constraints noted on the site visit are detailed in the table below. These cover all constraints from the port access gate through to the site access junction. No consideration of the transport issues within the port or development site have been undertaken and this includes the design of the site access junction.




Plans illustrating the location of the constraints are provided in Appendix A.





Table 3-1: Constraint Points and Details

POI	Key Constraint	Details
1	<p><b>Port of Rosyth Gate</b></p> 	<p>Loads will exit the port and proceed eastbound on St Margaret Way.</p> <p>A swept path assessment has been undertaken and indicates that loads will overrun and oversail the left hand verge on entry where a load bearing surface should be laid.</p> <p>Loads will overrun and oversail the central island where a load bearing surface should be laid. One lit set of chevron signs should be removed.</p> <p>Loads will oversail the central reservation of the exit arm, where two bollards should be removed. They will then oversail the left hand verge on exit, though no physical mitigation measures will be required.</p> <p>Swept path assessment SK01 is included in Appendix B.</p>
2	<p><b>St Margaret Way Roundabout</b></p> 	<p>Loads will take the first exit at the roundabout to continue on St Margaret Way.</p> <p>A swept path assessment has been undertaken and indicates that loads will oversail the left hand verge on entry, though no physical mitigation measures will be required.</p> <p>Loads will overrun and oversail the central island where a load bearing surface should be laid and the island lowered to carriageway level. One set of lit chevron signs should be removed and vegetation cleared.</p> <p>The blade will oversail the exit splitter island where one road sign and one bollard should be removed.</p> <p>Loads will then oversail the left hand verge following the roundabout, where one lighting column and one road sign should be removed.</p> <p>Swept path assessment SK02 is included in Appendix B.</p>





POI	Key Constraint	Details
3	<p><b>Dunsyre House Roundabout</b></p> 	<p>Loads will take the second exit at the roundabout to continue on St Margaret Way before joining the B981.</p> <p>A swept path assessment has been undertaken and indicates that when approaching the roundabout, loads will oversail the southern verge of the bend, where trees and vegetation should be clear. Loads will oversail the barrier.</p> <p>Loads will oversail the northern verge of the entry arm's central reservation, where one road sign and one bollard should be removed.</p> <p>Loads will overrun and oversail the central island where a load bearing surface should be laid and two sets of lit chevron signs removed. Vegetation should be cleared.</p> <p>The blade will oversail the exit splitter island where one road sign and one bollard should be removed.</p> <p>Loads will oversail the northern verge on exit, where one lighting column and one lit road sign should be removed. Loads will oversail the electrical box.</p> <p>Swept path assessment SK03 is included in Appendix B.</p>
4	<p><b>B981 Ferrytoll Gyrotory</b></p> 	<p>Loads will take the third exit at the roundabout to join the M90 southbound.</p> <p>A swept path assessment has been undertaken and indicates that the blade will oversail the northern verge of the entry arm, where one lighting column should be removed.</p> <p>Loads will oversail the north-western verge of the roundabout island, though no further physical mitigation will be required.</p> <p>Loads will then oversail the northern verge of the roundabout, where one traffic signal head, one lit road sign, one pedestrian crossing signal and guardrail should be removed.</p> <p>Loads will oversail the central reservation of the southbound off-slip, where one traffic signal head should be removed.</p> <p>The loads will also oversail the north-eastern verge of the roundabout island, where two traffic signal heads, two sets of lit chevron signs and one lighting column should be removed. Vegetation to be cleared. Loads will oversail barrier.</p> <p>Swept path assessment SK04 is included in Appendix B.</p>





POI	Key Constraint	Details
5	<p><b>M90 / M9 Slip Road</b></p> 	<p>Loads will exit the M90 at Kirkliston.</p> <p>Loads will straddle both lanes at this location. Vehicle escorts must ensure that trailing traffic does not attempt to merge into the convoy.</p>
6	<p><b>M9 Merge</b></p> 	<p>Loads will join the M9 southbound.</p> <p>Loads will straddle both lanes at this location. Vehicle escorts must ensure that loads can merge safely, and that trailing traffic does not attempt to merge into the convoy.</p>
7	<p><b>M9 Junction 2</b></p> 	<p>Loads will exit the M9 at Junction 2.</p> <p>Vehicle escorts must ensure that trailing traffic does not attempt to merge into the convoy.</p>

POI	Key Constraint	Details
8	<p><b>M8 Merge</b></p> 	<p>Loads will join the M8 eastbound.</p> <p>Vehicle escorts must ensure that loads can merge safely and that trailing traffic does not attempt to merge into the convoy.</p>
9	<p><b>M8 Hermiston Gait Roundabout</b></p> 	<p>Loads will take the third exit at the roundabout and join the A720 eastbound. Vehicle escorts must ensure that loads can merge safely, and that trailing traffic does not attempt to merge into the convoy</p> <p>A swept path assessment has been undertaken and indicates that loads will oversail the western verge of the entry arm, where one traffic signal and one lighting column should be removed.</p> <p>Loads will oversail the north-western verge of the roundabout, though no further physical mitigation will be required.</p> <p>Loads will also oversail the north-eastern verge of the roundabout island, where five traffic signal heads, four lighting columns, two road signs and two sets of chevron signs should be removed. Trees and vegetation should be cleared.</p> <p>Swept path assessment SK05 is included in Appendix B.</p>
10	<p><b>A720 Sheriffhall Roundabout</b></p> 	<p>Loads will take the third exit at the roundabout to continue on the A720. Vehicle escorts must ensure that loads can merge safely, and that trailing traffic does not attempt to merge into the convoy</p> <p>A swept path assessment has been undertaken and indicates that loads will oversail the northern verge of the roundabout island, where five traffic signal heads, three sets of chevron signs, three road signs, two lighting columns and two electrical boxes should be removed.</p> <p>Loads will oversail the northern verge of the exit arm, where two lighting columns, one road sign and sections of pedestrian guardrail should be removed.</p> <p>Swept path assessment SK06 is included in Appendix B.</p>





POI	Key Constraint	Details
11	<b>A720 Millerhill Junction</b> 	<p>Loads will cross the dual carriageway's central reservation before exiting the A720 at Millerhill through the westbound on-slip.</p> <p>A swept path assessment has been undertaken and indicates that loads will overrun and oversail the central reservation of the carriageway, where a load bearing surface should be laid and kerbs should be protected. Sections of barrier should be removed from the central reservation.</p> <p>Vehicle escorts must ensure that oncoming traffic is held during movement of loads.</p> <p>Swept path assessment SK07 is included in Appendix B.</p>
12	<b>A720 Slip Road / A68 Roundabout</b> 	<p>Loads will take the first exit at the roundabout to join the A68 southbound.</p> <p>A swept path assessment has been undertaken and indicates that loads will oversail the south-eastern verge of the roundabout, where one lit road sign, two road signs, three lighting columns and guardrail should be removed. Clearance to the embankment should be confirmed during the test run.</p> <p>Swept path assessment SK08 is included in Appendix B.</p>
13	<b>A68/A6106 Junction</b> 	<p>Loads will travel through the bend and continue on the A68.</p> <p>All street furniture should be removed from the central reservation to allow for passage of wide loads.</p>
14	<b>A68 Pathhead</b> 	<p>Loads will travel through the bend and enter Pathhead.</p> <p>Loads will straddle both lanes at this location. Vehicle escorts must ensure that trailing traffic does not attempt to overtake the convoy.</p>








POI	Key Constraint	Details
15	<b>A68 Pathhead - Main Street</b> 	<p>Loads will travel through the bend and continue southbound.</p> <p>A swept path assessment has been undertaken and indicates that loads will oversail the northern verge of the carriageway, where one tree should be relocated.</p> <p>Loads will oversail the southern verge, where one road sign should be removed from the footpath. They will also oversail the central island, where two bollards should be removed.</p> <p>Swept path assessment SK09 is included in Appendix B.</p>
16	<b>A68 Pathhead – Roman Camp</b> 	<p>Loads will travel through the bend and continue on Main St.</p> <p>A swept path assessment has been undertaken and indicates that loads will oversail the western verge, though no further physical mitigation will be required.</p> <p>Loads will also oversail the eastern verge, where trees should be trimmed or removed.</p> <p>Swept path assessment SK10 is included in Appendix B.</p>
17	<b>A68 South-East of Pathhead</b> 	<p>Loads will travel through the bend and continue on the A68.</p> <p>Loads will straddle both lanes at this location. Vehicle escorts must ensure that trailing traffic does not attempt to overtake the convoy.</p>
18	<b>A68 Laird's Entry</b> 	<p>Loads will travel through the bend and continue southbound.</p> <p>Loads will straddle both lanes at this location. The advance escorts must ensure the convoy has full access to both lanes of the carriageway as wider loads will straddle the centre line.</p>




POI	Key Constraint	Details
19	<p><b>A68 North-West of Fala Dam</b></p> 	<p>Loads will travel through the bend and continue on the A68.</p> <p>Loads will straddle both lanes at this location. The advance escorts must ensure the convoy has full access to both lanes of the carriageway as wider loads will straddle the centre line.</p>
20	<p><b>A68/B6458 Junction</b></p> 	<p>Loads will travel through the bend and continue southbound.</p> <p>Loads will oversail the verge on the inside of the bend.</p>
21	<p><b>A68 South of Fala Dam Bends</b></p> 	<p>Loads will travel through the bends and continue southbound.</p> <p>A swept path assessment has been undertaken and indicates that loads will overrun and oversail the southern verge on approach to the first bend where a load bearing surface should be laid. Two sets of chevron signs to be removed. Vegetation to be cleared.</p> <p>Loads to oversail barrier on the northern verge of the first bend. They will then oversail the hazard markers on the northern verge of the second bend, where trees and vegetation should be trimmed.</p> <p>Swept path assessment SK11 is included in Appendix B.</p>
22	<p><b>A68 Fala Village</b></p> 	<p>Loads will travel through the bend and continue on the A68.</p> <p>Loads will straddle both lanes at this location. The advance escorts must ensure the convoy has full access to both lanes of the carriageway as wider loads will straddle the centre line.</p>




POI	Key Constraint	Details
23	<p><b>A68/B6368 Junction Bends</b></p> 	<p>Loads will travel through the bend and continue southbound.</p> <p>Loads will oversail the verge on the inside of the right bend.</p>
24	<p><b>A68 Headshaw Burn</b></p> 	<p>Loads will travel through the bend and continue on the A68.</p> <p>Loads will straddle both lanes at this location. The advance escorts must ensure the convoy has full access to both lanes of the carriageway as wider loads will straddle the centre line.</p>
25	<p><b>A68 North-West of Oxton</b></p> 	<p>Loads will travel through the bend and continue southbound.</p> <p>The clearances to overhead utility wires will need to be confirmed with the utility firms prior to loads moving under them to avoid dangers of flashover.</p>
26 & 27	<p><b>A68 Carfraemill Roundabout and Bend</b></p> 	<p>Loads will take the first exit at the roundabout and continue on the A697.</p> <p>A swept path assessment has been undertaken and indicates that loads will oversail the central reservation of the entry arm, where one bollard should be removed.</p> <p>Loads will oversail the northern verge of the roundabout, where three lighting columns, one road signs and one electrical box should be removed. Trees and vegetation should also be trimmed.</p> <p>Loads will also oversail the southern verge of the right bend, where two road signs should be removed and trees should be trimmed. A land ownership review should be undertaken at this location.</p> <p>Swept path assessment SK12 is included in Appendix B.</p>

POI	Key Constraint	Details
28	<b>A697 Kelphope Burn Bridge</b> 	<p>Loads will travel over the bridge and continue southbound.</p> <p>The vertical profile of the road at this location is pronounced and should be reviewed during the test run stage to ascertain if tar wedges will be required to prevent grounding.</p>
29	<b>A697 South-East of Carfraemill</b> 	<p>Loads will travel through the bend and continue on the A697.</p> <p>The vertical profile of the road at this location is pronounced and should be reviewed during the test run stage to ascertain if tar wedges will be required to prevent grounding.</p> <p>Trees should be trimmed.</p>
30	<b>A697 North-West of Addinston</b> 	<p>Loads will travel through the bend and continue southbound.</p> <p>The advance escorts must ensure the convoy has full access to both lanes of the carriageway as wider loads will straddle the centre line.</p>
31	<b>A697 North of Lauder</b> 	<p>Loads will travel through the bend and continue on the A697.</p> <p>The advance escorts must ensure the convoy has full access to both lanes of the carriageway as wider loads will straddle the centre line.</p>




POI	Key Constraint	Details
32	<b>A697 East of Lauder Bend 1</b> 	<p>Loads will travel through the bends and continue on the A697.</p> <p>A swept path assessment has been undertaken and indicates that loads will oversail both verges of the carriageway, where trees and vegetation should be trimmed.</p> <p>Swept path assessment SK13 is included in Appendix B.</p>
33	<b>A697 East of Lauder Bend 2</b> 	<p>Loads will travel through the bends and continue on the A697.</p> <p>A swept path assessment has been undertaken and indicates that loads will oversail the inside of the bend on the eastern verge of the carriageway, though no further physical mitigation will be required.</p> <p>Swept path assessment SK14 is included in Appendix B.</p>
34	<b>A697 South-East of Lauder</b> 	<p>Loads will travel through the bend and continue southbound.</p> <p>The advance escorts must ensure the convoy has full access to both lanes of the carriageway as wider loads will straddle the centre line.</p> <p>Tree canopy and verge vegetation should be trimmed.</p>
35	<b>A697/B6362 Junction</b> 	<p>Loads will travel through the bend and continue on the A697.</p> <p>The advance escorts must ensure the convoy has full access to both lanes of the carriageway as wider loads will straddle the centre line.</p> <p>The clearances to overhead utility wires will need to be confirmed with the utility firms prior to loads moving under them to avoid dangers of flashover.</p> <p>Trees and vegetation should be trimmed.</p>

POI	Key Constraint	Details
36	<p><b>A697 South-West of Thirlestane</b></p> 	<p>Loads will travel through the bends and continue eastbound.</p> <p>A swept path assessment has been undertaken and indicates that loads will oversail the northern verge of the carriageway, where vegetation should be trimmed.</p> <p>Swept path assessment SK15 is included in Appendix B.</p>
37	<p><b>A697 Thirlestane</b></p> 	<p>Loads will travel through the bends and continue on the A697.</p> <p>A swept path assessment has been undertaken and indicates that loads will overrun and oversail the northern verge of the carriageway, where a load bearing surface should be laid. A section of barrier should be removed and trees should be trimmed.</p> <p>Loads will also oversail the southern verge of the carriageway, where they will oversail the barrier. Trees and vegetation should be trimmed.</p> <p>Swept path assessment SK16 is included in Appendix B.</p>
38	<p><b>A697 East of Thirlestane</b></p> 	<p>Loads will travel through the bend and continue northbound.</p> <p>The advance escorts must ensure the convoy has full access to both lanes of the carriageway as wider loads will straddle the centre line.</p>
39	<p><b>A697 East of Thirlestane 2</b></p> 	<p>Loads will travel through the bend and continue on the A697.</p> <p>The advance escorts must ensure the convoy has full access to both lanes of the carriageway as wider loads will straddle the centre line.</p> <p>Trees and vegetation should be trimmed through the bends.</p>

POI	Key Constraint	Details
40	<b>A697 North-West Whiteburn</b> 	<p>Loads will travel through the bend and continue on the A697.</p> <p>The advance escorts must ensure the convoy has full access to both lanes of the carriageway as wider loads will straddle the centre line.</p>
41	<b>A697 Whiteburn</b> 	<p>Loads will travel through the bend and continue eastbound.</p> <p>The advance escorts must ensure the convoy has full access to both lanes of the carriageway as wider loads will straddle the centre line.</p>
42	<b>A697 East of Whiteburn</b> 	<p>Loads will travel through the bend, before taking turning at the next junction.</p> <p>A swept path assessment has been undertaken and indicates that loads will oversail the northern verge of the carriageway, where the trees should be trimmed.</p> <p>Swept path assessment SK17 is included in Appendix B.</p>



POI	Key Constraint	Details
43	<p><b>A697/B6456 Junction</b></p> 	<p>Loads will turn left at the junction and continue northbound on the B6456.</p> <p>A swept path assessment has been undertaken and indicates that loads will overrun and oversail the inside of the bend, on the western verge of the carriageway, where a load bearing surface should be laid. Two utility posts should be relocated. Trees, vegetation and fencing to be removed.</p> <p>Loads will also oversail the southern verge, on approach to the junction, where trees should be trimmed.</p> <p>Loads will overrun and oversail the north-western verge through the right hand bend, where a load bearing surface should be laid and trees should be trimmed.</p> <p>Loads will also oversail the south-eastern verge through the right hand bend, where trees should be trimmed.</p> <p>Overhanging trees should be trimmed on both sides of the carriageway from this point to allow for loads to travel through this section without obstruction.</p> <p>Swept path assessment SK18 is included in Appendix B.</p>
44	<p><b>B6456 Bend 1</b></p> 	<p>Loads will travel through the bends and continue on the B6456.</p> <p>A swept path assessment has been undertaken and indicates that loads will oversail both verges of the carriageway, where trees and vegetation should be trimmed.</p> <p>Swept path assessment SK19 is included in Appendix B.</p>
45	<p><b>B6456 Bend 2</b></p> 	<p>Loads will travel through the crossroads, followed by the bends, before continuing northbound.</p> <p>A swept path assessment has been undertaken and indicates that loads will oversail both verges at the crossroads, where vegetation should be trimmed. One utility post should also be relocated from the southern verge.</p> <p>Loads will oversail both verges through the bends. Trees and vegetation should be cleared from the southern verge. Fencing, gate and vegetation should be removed from the northern verge.</p> <p>Loads will also oversail the south-eastern verge after the bends, where trees and vegetation should be trimmed.</p> <p>Swept path assessment SK20 is included in Appendix B.</p>



POI	Key Constraint	Details
46	<p><b>B6456 Bend 3</b></p> 	<p>Loads will travel through the bend and continue on the B6456.</p> <p>A swept path assessment has been undertaken and indicates that loads will oversail the north-western verge, where one road sign should be removed and vegetation should be trimmed.</p> <p>Loads will also oversail the southern verge, where the gate and fencing should be removed. Vegetation to be trimmed.</p> <p>Parking should be suspended at this location during the movement of the convoys.</p> <p>Swept path assessment SK21 is included in Appendix B.</p>
47	<p><b>B6456 Bend 4</b></p> 	<p>Loads will travel through the bend and continue northbound.</p> <p>A swept path assessment has been undertaken and indicates that loads will oversail the northern verge of the carriageway, where vegetation should be trimmed.</p> <p>Swept path assessment SK22 is included in Appendix B.</p>
48	<p><b>B6456 Bend 5</b></p> 	<p>Loads will travel through the bend and continue on the B6456.</p> <p>A swept path assessment has been undertaken and indicates that loads will oversail the southern verge of the carriageway, where vegetation should be trimmed.</p> <p>The clearances to overhead utility wires will need to be confirmed with the utility firms prior to loads moving under them to avoid dangers of flashover.</p> <p>Swept path assessment SK23 is included in Appendix B.</p>

POI	Key Constraint	Details
49	<p><b>Proposed Transfer Point</b></p> 	<p>Due to constraints at Westruther, blade loads will need to be transferred from the blade dolly trailer to a blade lifting trailer. This transshipment must be made at a transfer point.</p> <p>The transfer location must be created on flat ground and should be in the region of 200m by 50m in area and run parallel to the existing road. A design of the area has not been prepared as it is influenced by the topography of the land obtained for its purpose.</p> <p>The transfer area should feature two crane pads and sufficient storage for up to six blades. The exact location of the transfer area will be confirmed post consent, but will be to the west of Westruther.</p> <p>The blades would be carried in the upright position for the rest of the route, although they can be lowered under overhead utility lines where the road is straight.</p> <p><b><u>All overhead utilities and obstructions will need to be removed from this point to the site. A full consultation with all utility providers will be required to ensure that overhead obstructions are removed prior to deliveries.</u></b></p>
50	<p><b>B6456 South-West of Westruther Bridge</b></p> 	<p>Loads will travel through the bend and continue northbound.</p> <p>A swept path assessment has been undertaken and indicates that loads will oversail the northern verge of the carriageway, though no further physical mitigation will be required.</p> <p>The overhead utility wires will need to be lowered / removed to allow the raised blade to transit this section.</p> <p>Swept path assessment SK24 is included in Appendix B.</p>
51	<p><b>B6456 South-West of Westruther Bend 1</b></p> 	<p>Loads will travel through the bend and continue on the B6456.</p> <p>A swept path assessment has been undertaken and indicates that loads will oversail the north-eastern verge of the carriageway, where two road signs should be removed. Trees and vegetation should be trimmed.</p> <p>The overhead utility wires will need to be lowered / removed to allow the raised blade to transit this section.</p> <p>Swept path assessment SK24 is included in Appendix B.</p>

POI	Key Constraint	Details
52	<b>B6456 South-West of Westruther Bend 2</b> 	<p>Loads will travel through the bend and continue on the B6456.</p> <p>A swept path assessment has been undertaken and indicates that loads will oversail the western verge prior to the bend, where one road sign and one sign post should be removed.</p> <p>Loads will oversail the eastern verge through the bend, where one sign post and one utility post should be removed. Trees and vegetation should be trimmed.</p> <p>Loads will also oversail the north-western verge after the bend, where trees should be trimmed.</p> <p>Swept path assessment SK24 is included in Appendix B.</p>
53	<b>B6456 Westruther</b> 	<p>Loads will travel through the junction and continue eastbound.</p> <p>A swept path assessment has been undertaken and indicates that loads will oversail the footpath on the southern verge of the carriageway, though no further physical mitigation will be required.</p> <p>Swept path assessment SK25 is included in Appendix B.</p>
54	<b>B6456 East of Westruther 1</b> 	<p>Loads will travel through the bend and continue on the B6456.</p> <p>The vertical profile of the road at this location is pronounced and should be reviewed during the test run stage to ascertain if tar wedges will be required to prevent grounding.</p>
55	<b>B6456 East of Westruther 2</b> 	<p>Loads will travel through the bend and continue eastbound.</p> <p>The advance escorts must ensure the convoy has full access to both lanes of the carriageway as wider loads will straddle the centre line.</p>

POI	Key Constraint	Details
56	<p><b>B6456/Unclassified Road Junction</b></p> 	<p>Loads will turn left at the junction and continue north.</p> <p>A swept path assessment has been undertaken and indicates that loads will overrun and oversail the southern verge of the carriageway on approach to the junction, where a load bearing surface should be laid and the embankment should be levelled. Fencing, gate and a section of stone wall should be removed. Vegetation should also be cleared.</p> <p>Loads will also oversail the inside verge of the junction, though no further physical mitigation will be required.</p> <p>Loads will then overrun and oversail the eastern verge of the junction, where a load bearing surface should be laid. One utility post should be relocated and vegetation should be cleared.</p> <p>Overhanging trees should be trimmed on both sides of the carriageway.</p> <p><i>The road from this point to site will need to be widened to a minimum of 4.5m running width and a 5.5m clearance width. An indicative 4.5m widening line has been applied to the drawings and all mitigation marked up beyond this required point. The tree canopy over the road will need to be removed to allow for the raised blade.</i></p> <p>Swept path assessment SK26 is included in Appendix B.</p>
57	<p><b>Unclassified Road – Site Access</b></p> 	<p>Loads will turn right at the junction and continue across the bridge.</p> <p>A swept path assessment has been undertaken and indicates that loads will oversail the western verge on approach to the junction, where trees and vegetation should be trimmed.</p> <p>Load swill also overrun and oversail the eastern verge through the junction, where a load bearing surface should be laid. Fencing, gate and a section of stone wall should be removed.</p> <p>Swept path assessment SK27 is included in Appendix B.</p>

### 3.4 Swept Path Assessment Results and Summary

The detailed swept path drawings for the locations assessed are provided in Appendix B for review. The drawings in Appendix B illustrate tracking undertaken for the worst case loads at each location.

The colours illustrated on the swept paths are:

- Grey / Black – OS / Topographical Base Mapping;
- Green – Vehicle body outline (body swept path);
- Red – Tracked pathway of the wheels (wheel swept path); and

- Purple – The over-sail tracked path of the load where it encroaches outwith the trailer (load swept path).

Where mitigation works are required, the extents of over-run and over-sail areas are illustrated on the swept path drawings.

Please note that where assessments have been undertaken using Ordnance Survey (OS) base mapping, there can be errors in this data source.

Where provided by the client, topographical data has been utilised. Please note that PF cannot accept liability for errors on the data source, be that OS base mapping or client supplied data.

### 3.5 Weight Review

A weight review has been undertaken via the ESDAL (Electronic Service Delivery for Abnormal Loads) contacts database using the Highways Agency website [www.esdal.com](http://www.esdal.com).

All of the relevant ESDAL contacts are noted in Table 3-2 and all have been contacted to ascertain if there are any relevant constraints that should be noted. The feedback from the consultees is provided in Appendix C.

Table 3-2: ESDAL Contacts

Organisation	Email Address
Fife Council	
Forth Bridge	
Scottish Borders Council	
BEAR Scotland	
Police Scotland	
Network Rail	
Historic Rail Estate	
Scottish Canals	
Transport Scotland	
Scotland Transerv	

### 3.6 Land Ownership

The limits of road adoption can vary depending upon the location of the site and the history of the road agencies involved. The adopted area is generally defined as land contained within a defined boundary where the road agency holds the maintenance rights for the land. In urban areas, this usually defined as the area from the edge of the footway across the road to the opposing footway back edge. In rural areas the area of adoption can be open to greater interpretation as defined boundaries may not be readily visible. In these locations, the general rule is that the area of adoption is between established fence / hedge lines or a maximum 2m from the road edge. This can vary between areas and location.

### 3.7 Summary Issues

It is strongly suggested that following a review of the RSR, EDF should undertake the following prior to the delivery of the first abnormal loads, to ensure load and road user safety:

- That any necessary topographical surveys are undertaken, and the swept path results completed;
- A review of axle loading on structures along the entire access route with the various road agencies is undertaken immediately prior to the loads being transported in case of last minute changes to structures;
- A review of clear heights with utility providers and the transport agencies along the route to ensure that there is sufficient space to allow for loads plus sufficient flashover protection (to electrical installations);
- That any verge vegetation and tree canopies which may foul loads is trimmed prior to loads moving;

- That a review of potential roadworks and or closures is undertaken once the delivery schedule is established in draft form;
- That a test run is completed to confirm the route and review any vertical clearance issues; and
- That a condition survey is undertaken to ascertain the extents of road defects prior to loads commencing to protect the developer from spurious damage claims.

## 4 Summary

### 4.1 Summary of Access Review

PF has been commissioned by EDF to prepare a Route Survey Report to examine the issues associated with the transport of AIL turbine components to Dunside Wind Farm.

This report identifies the key points and issues associated with the proposed route and outlines the issues that will need to be considered for successful delivery of components.

The report is presented for consideration to EDF. Various road modifications, structural reviews, and interventions are required to successfully access the site. If these are undertaken, access to the consented wind farm site is considered feasible.

### 4.2 Further Actions

The following actions are recommended to pursue the transport and access issues further:

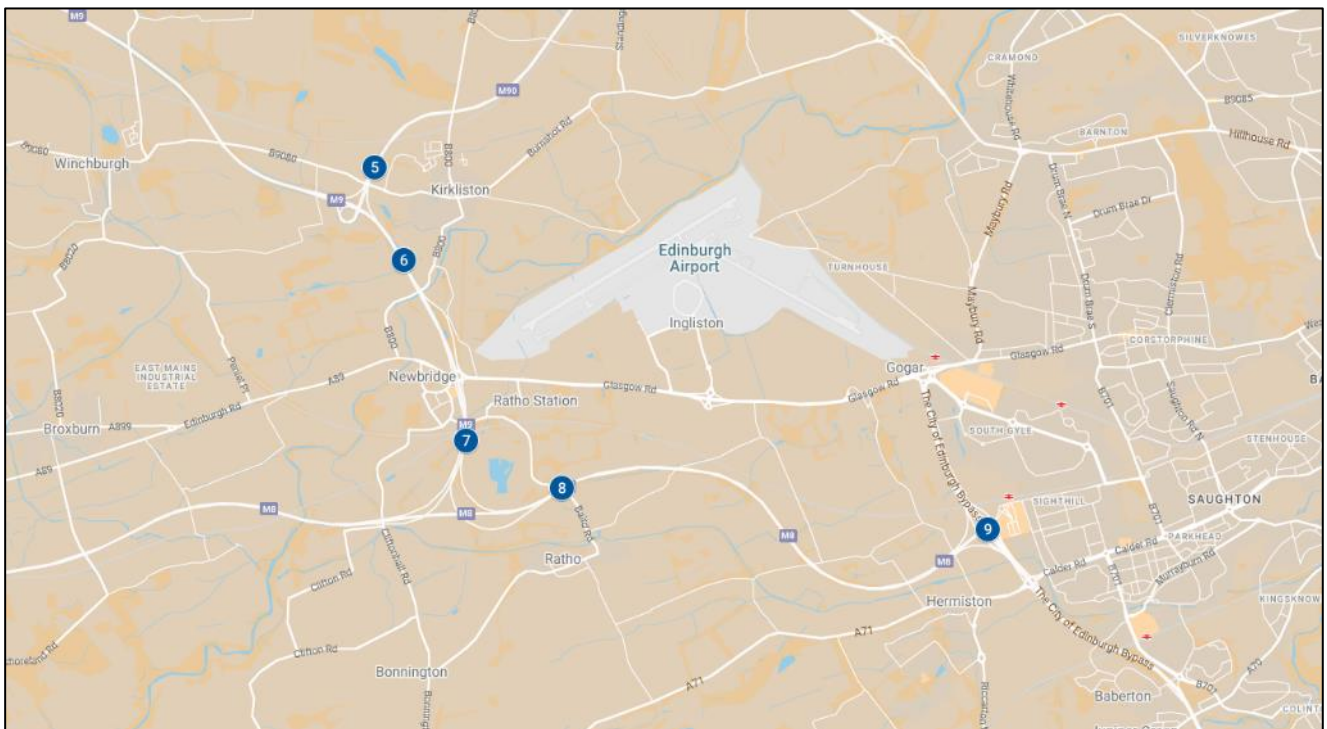
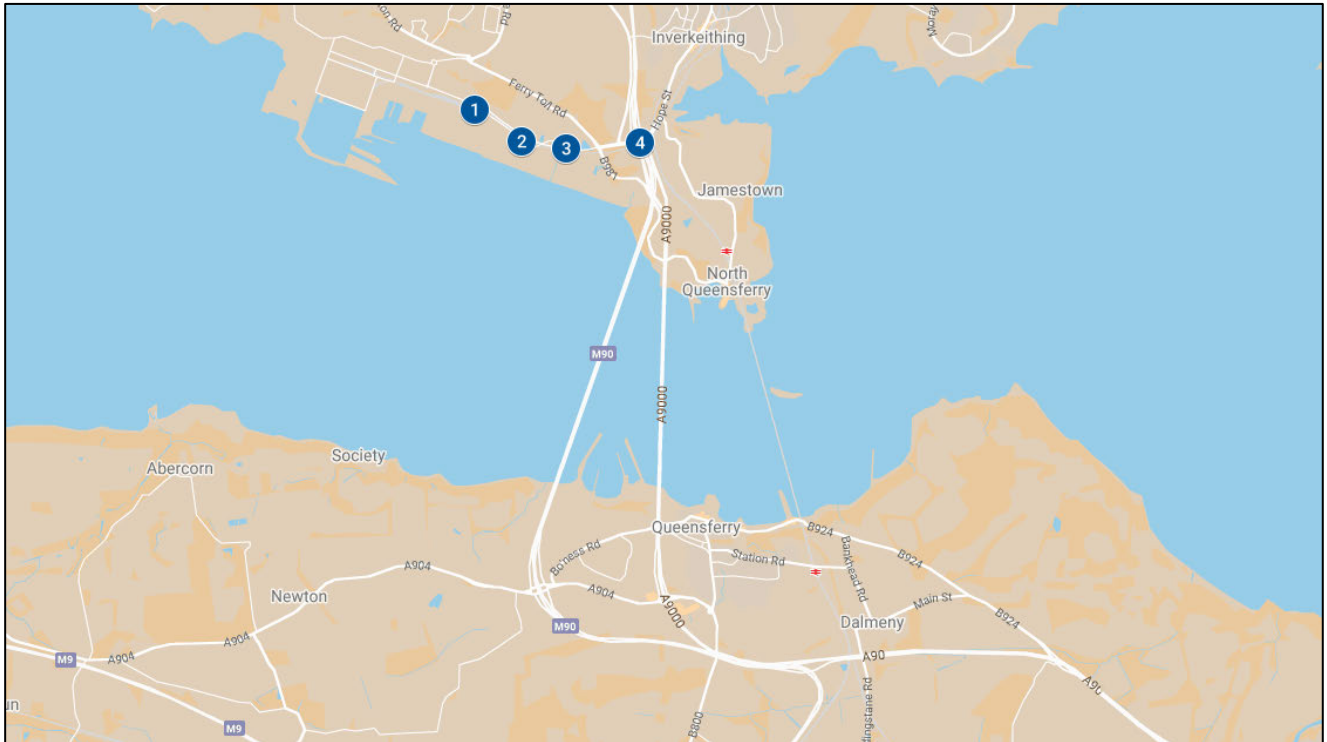
- Prepare detailed mitigation design proposals to help inform the land option / consultee discussions;
- Obtain the necessary land options;
- Undertake discussion with the affected utility providers and roads agencies;
- Obtain the necessary statutory licences to enable the mitigation measures; and
- Develop a detailed operational Transport Management Plan to assist in transporting the proposed loads.

## Appendix A Points of Interest

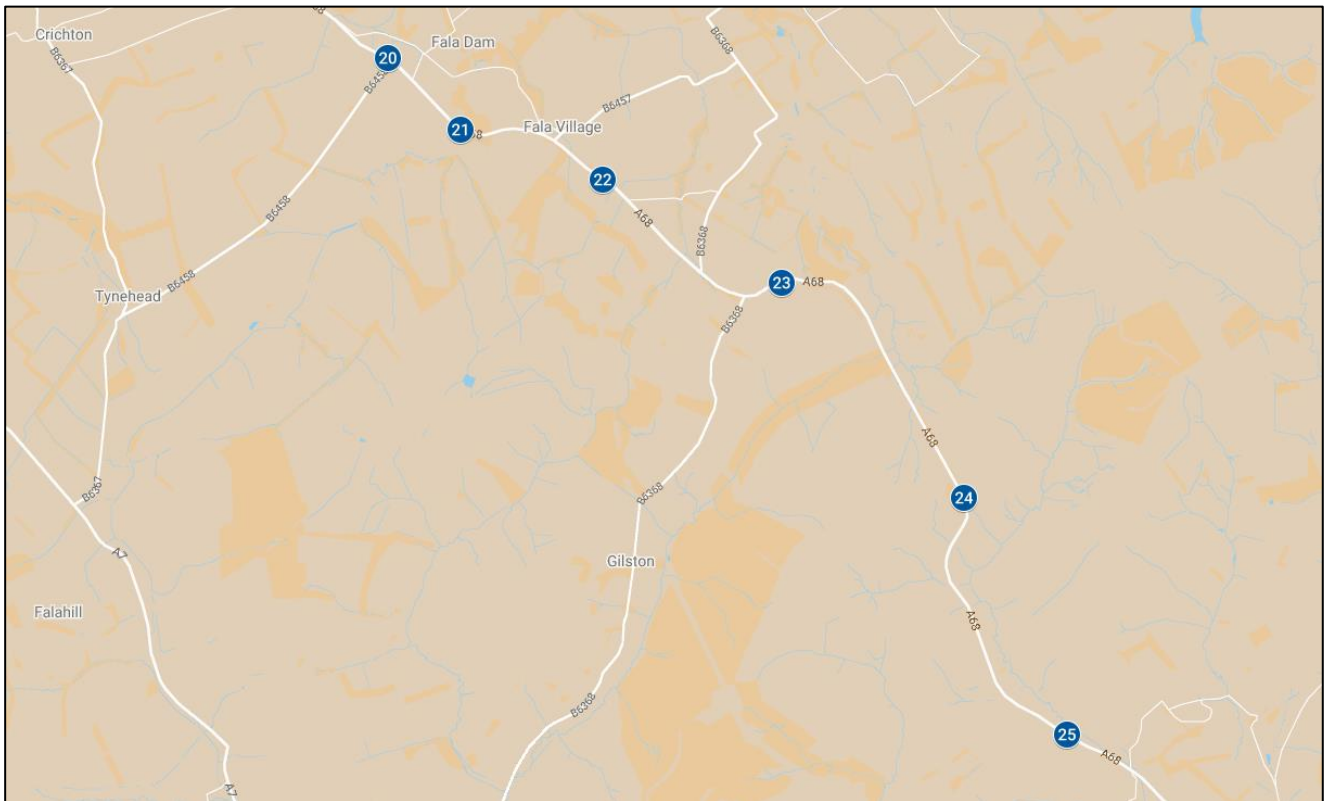
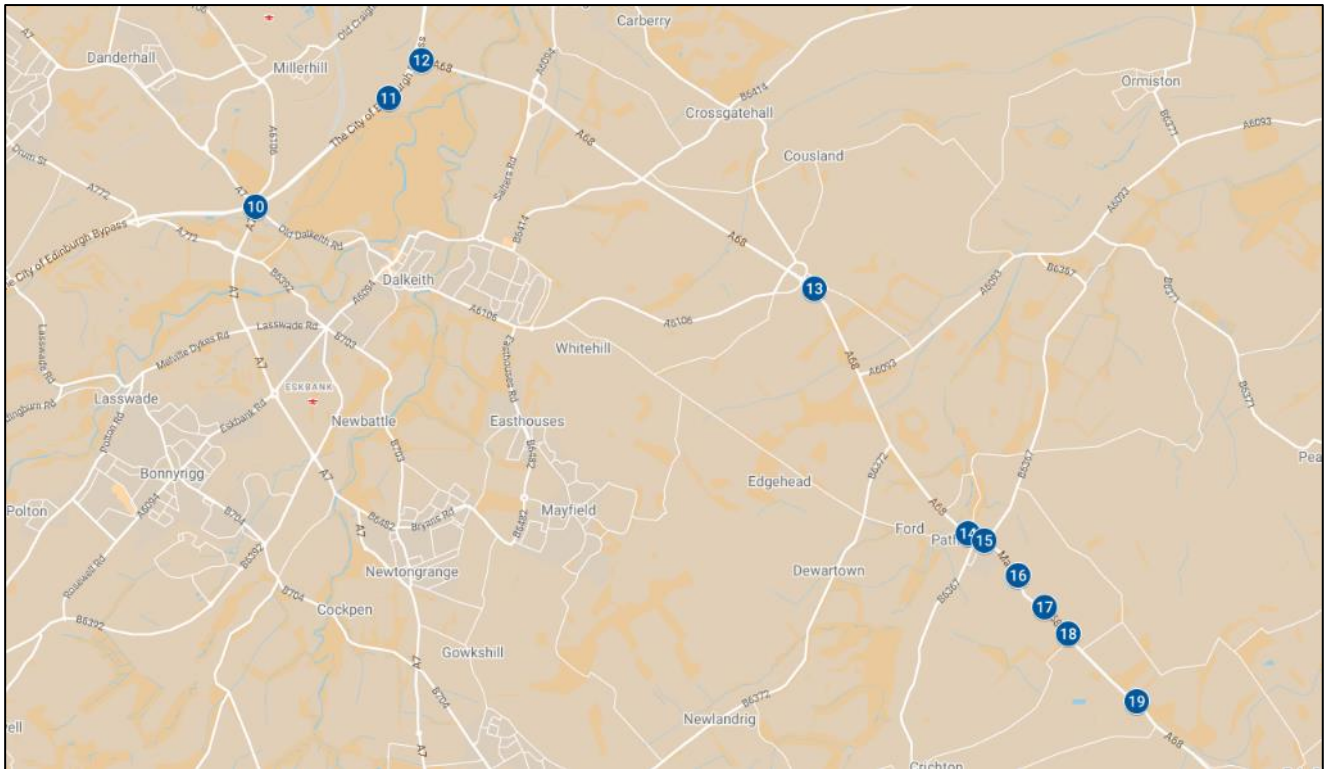


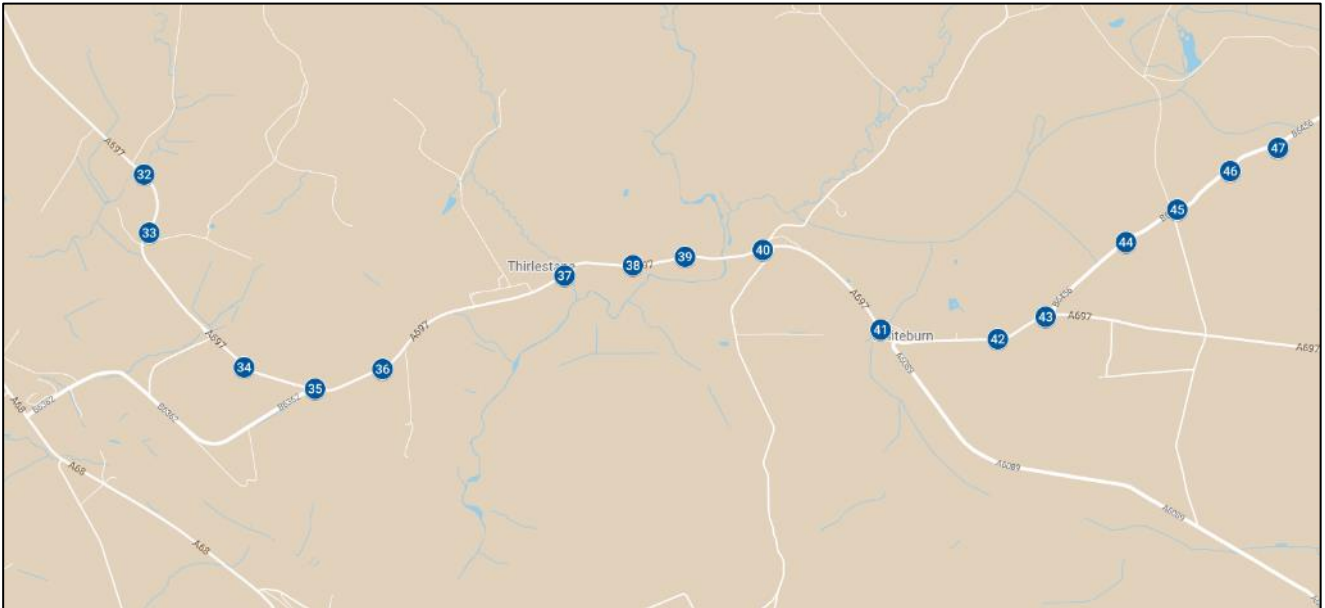
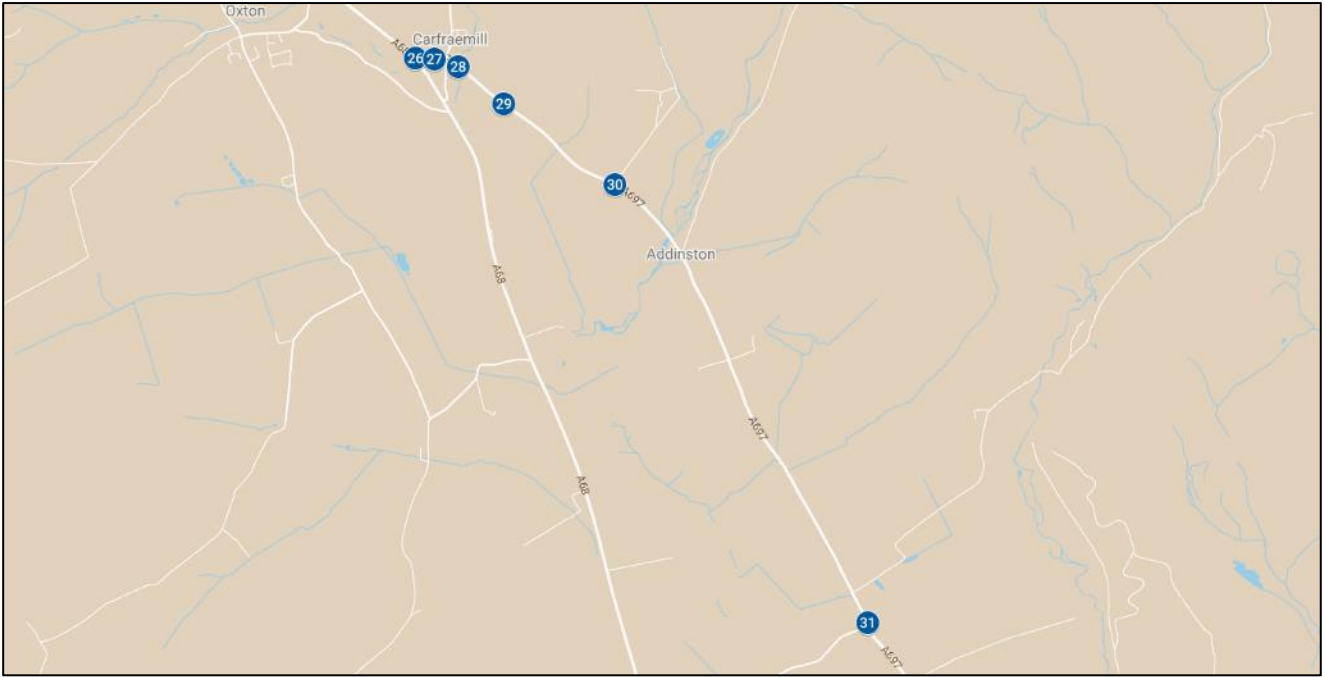
The following plans can be viewed electronically here:

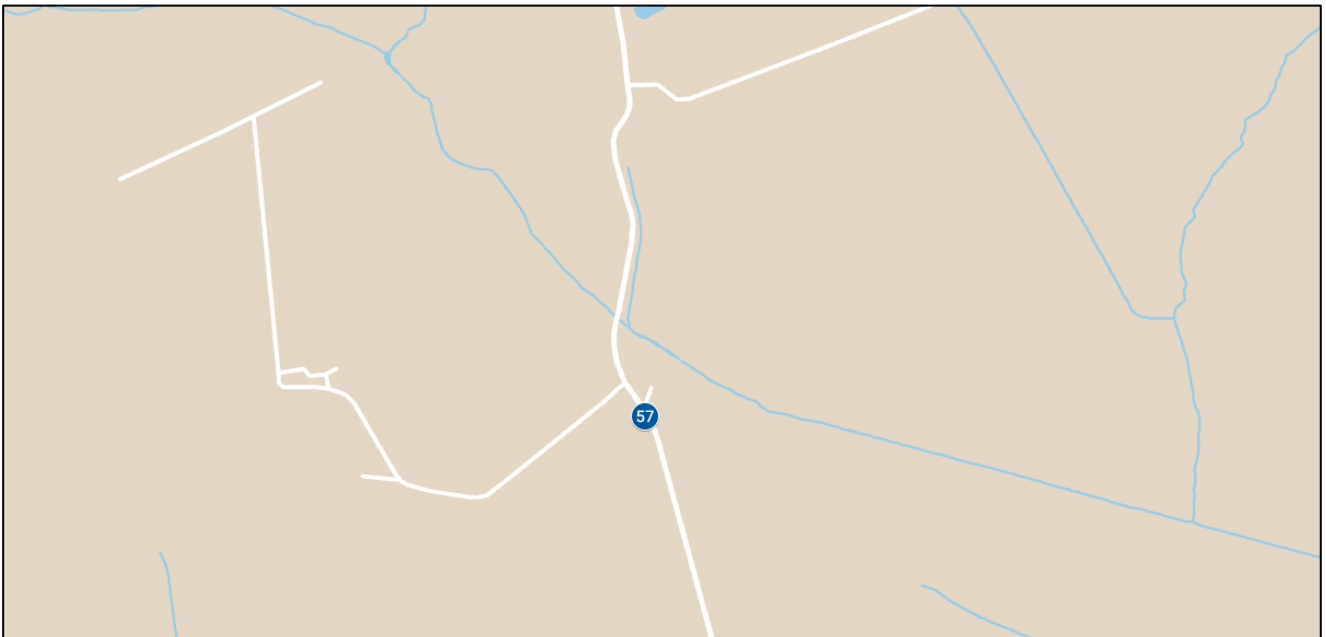
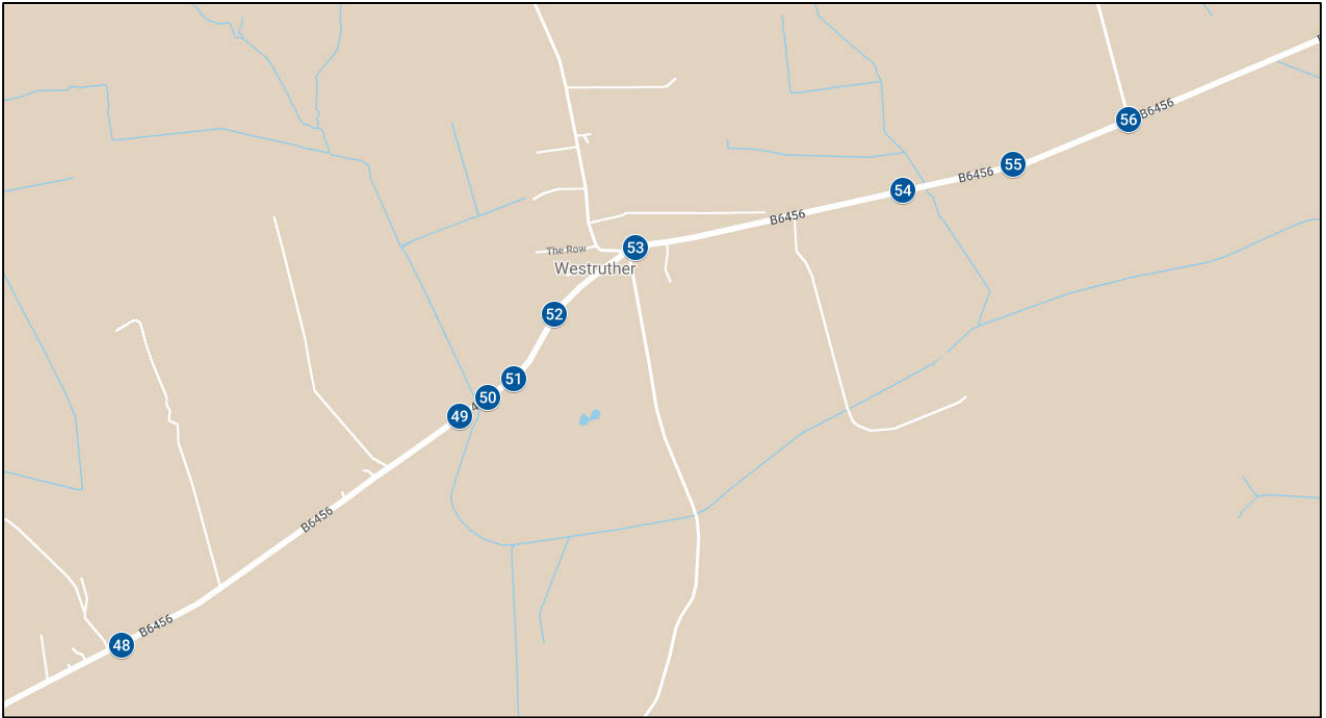
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Dunside Wind Farm  
Abnormal Indivisible Load Route Survey



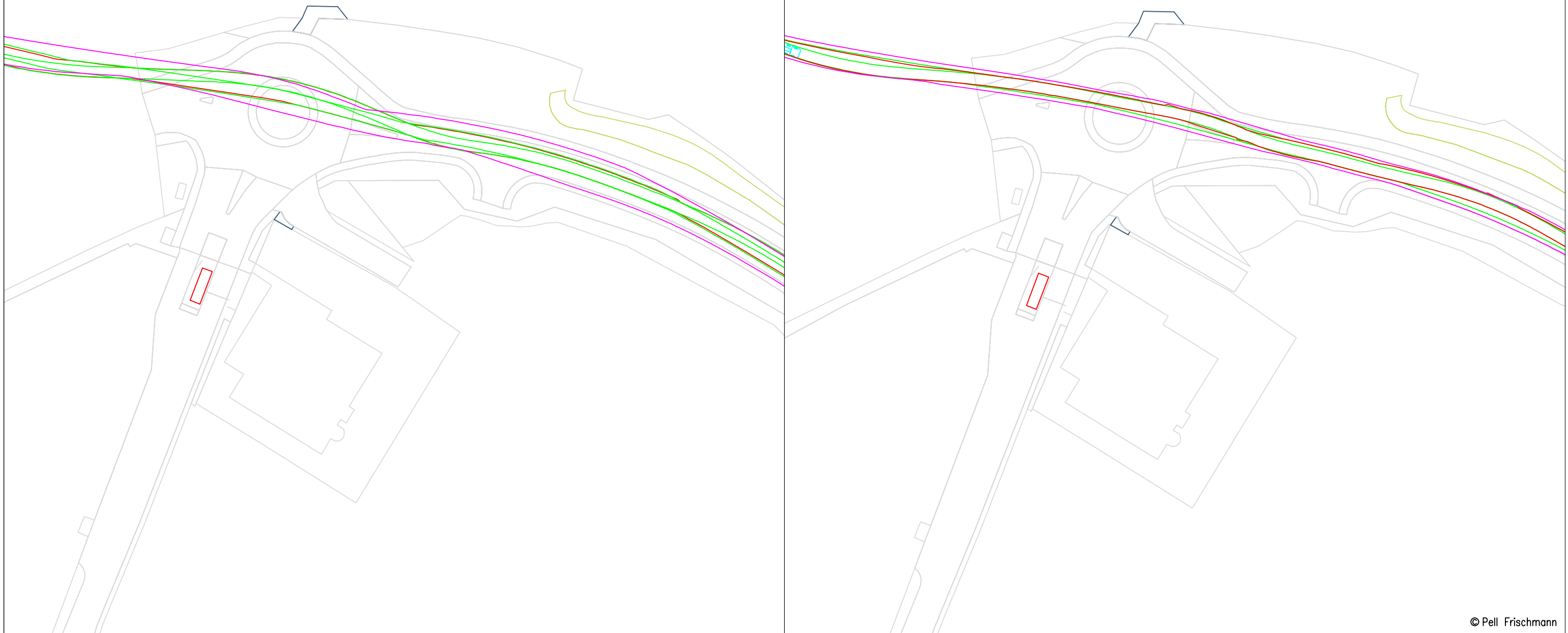




## Appendix B Swept Path Assessments

Blade

Tower



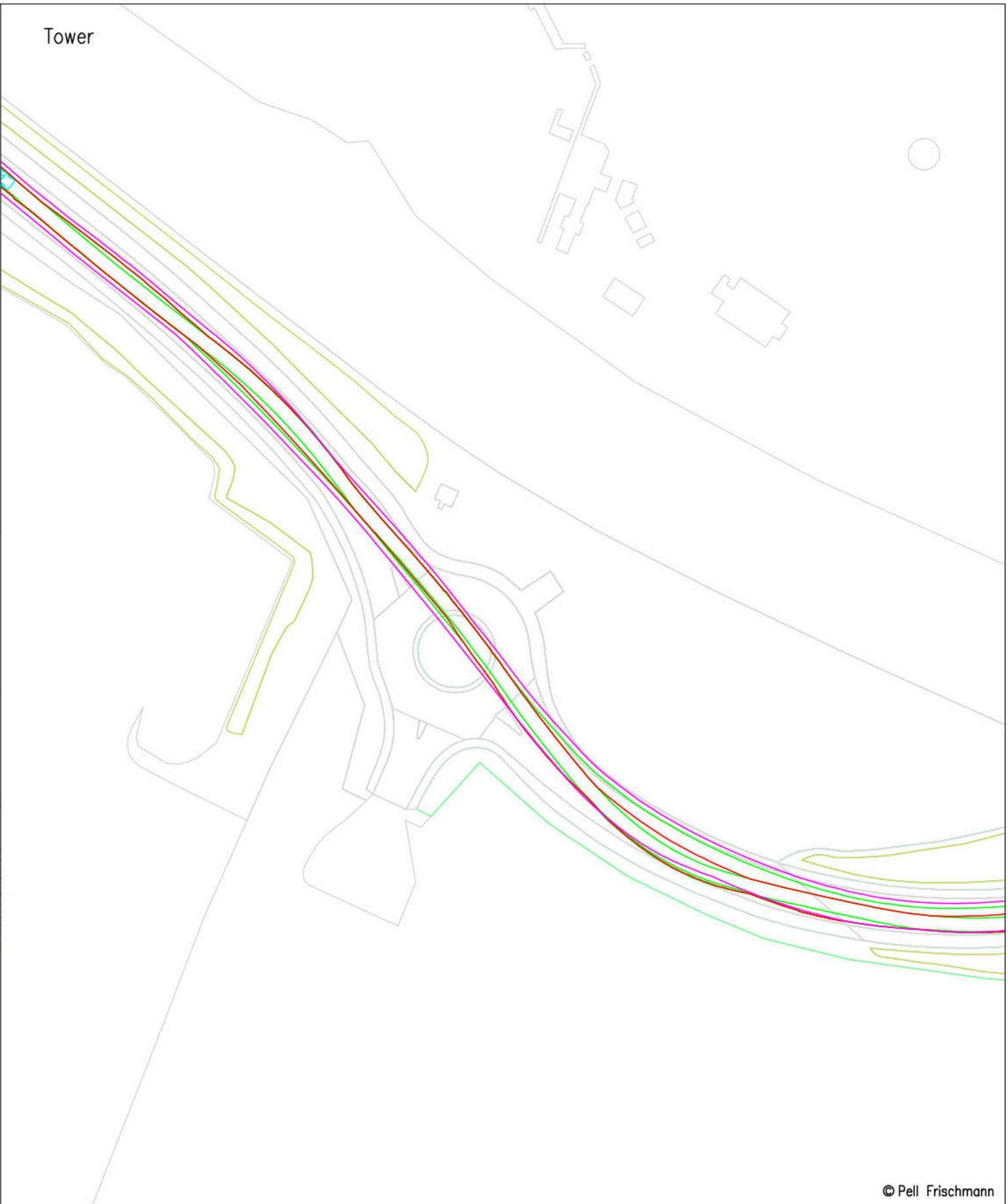
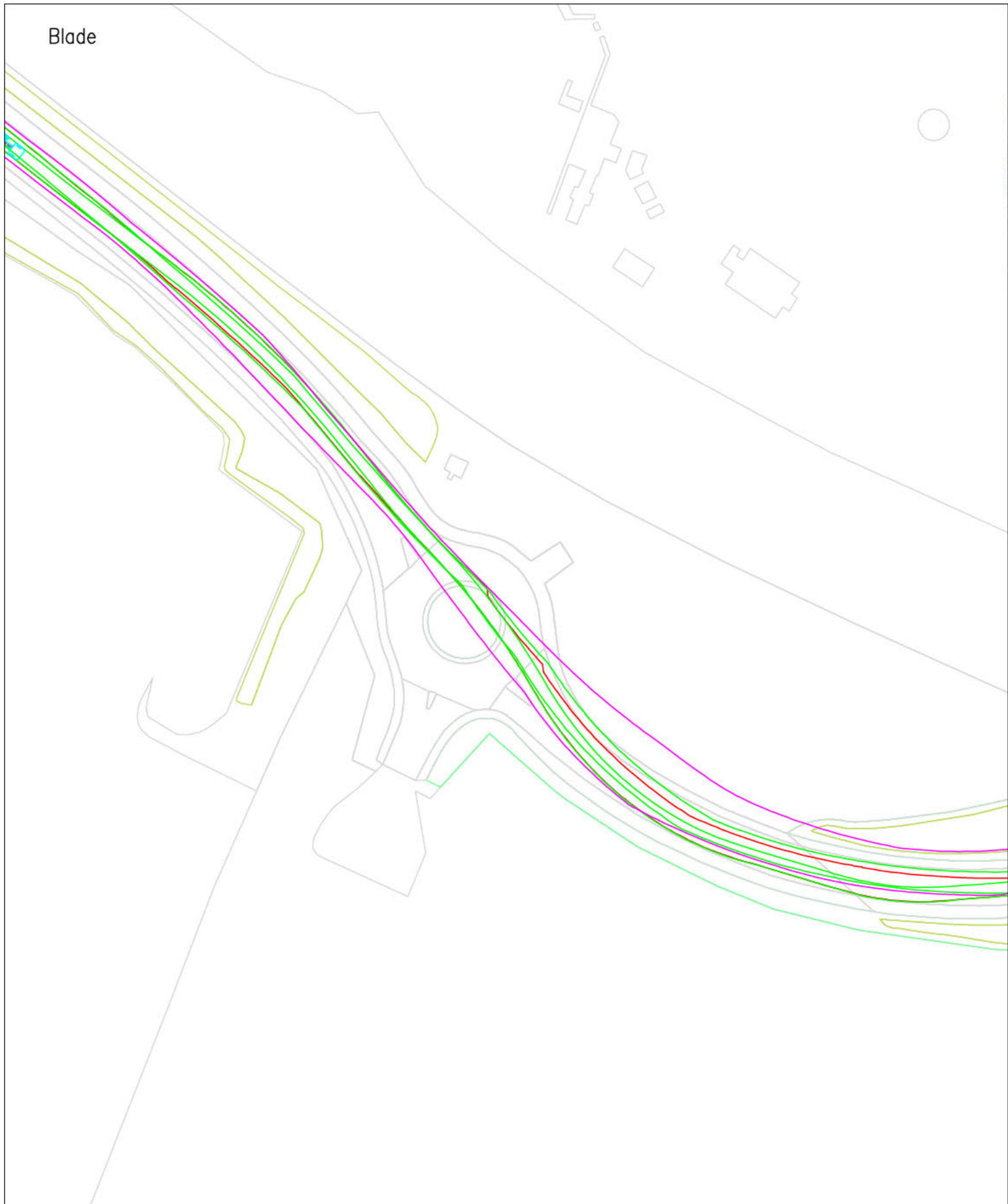
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<b>Pell Frischmann</b> <small>93 GEORGE STREET, EDINBURGH, EH2 3ES</small> <small>Tel: +44 (0)131 240 1270</small> <small>Email: pfeinburgh@pellfrischmann.com</small> <small>www.pellfrischmann.com</small>		Project		Dunside Wind Farm		Drawn	SK	02/06/2022	Scale	1:1000 @ A3	
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EDF		Siemens SG170 Blade and Tower		Checked	GB	02/06/2022	Drawing Status		Draft		
SPA Location		Port of Rosyth Gate		Point of Interest		1		Drawing No.		SK01	
Key		Wheel SPA Body SPA Load SPA Indicative Over-run Over-sail		Notes:		1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only.		Revision		1	



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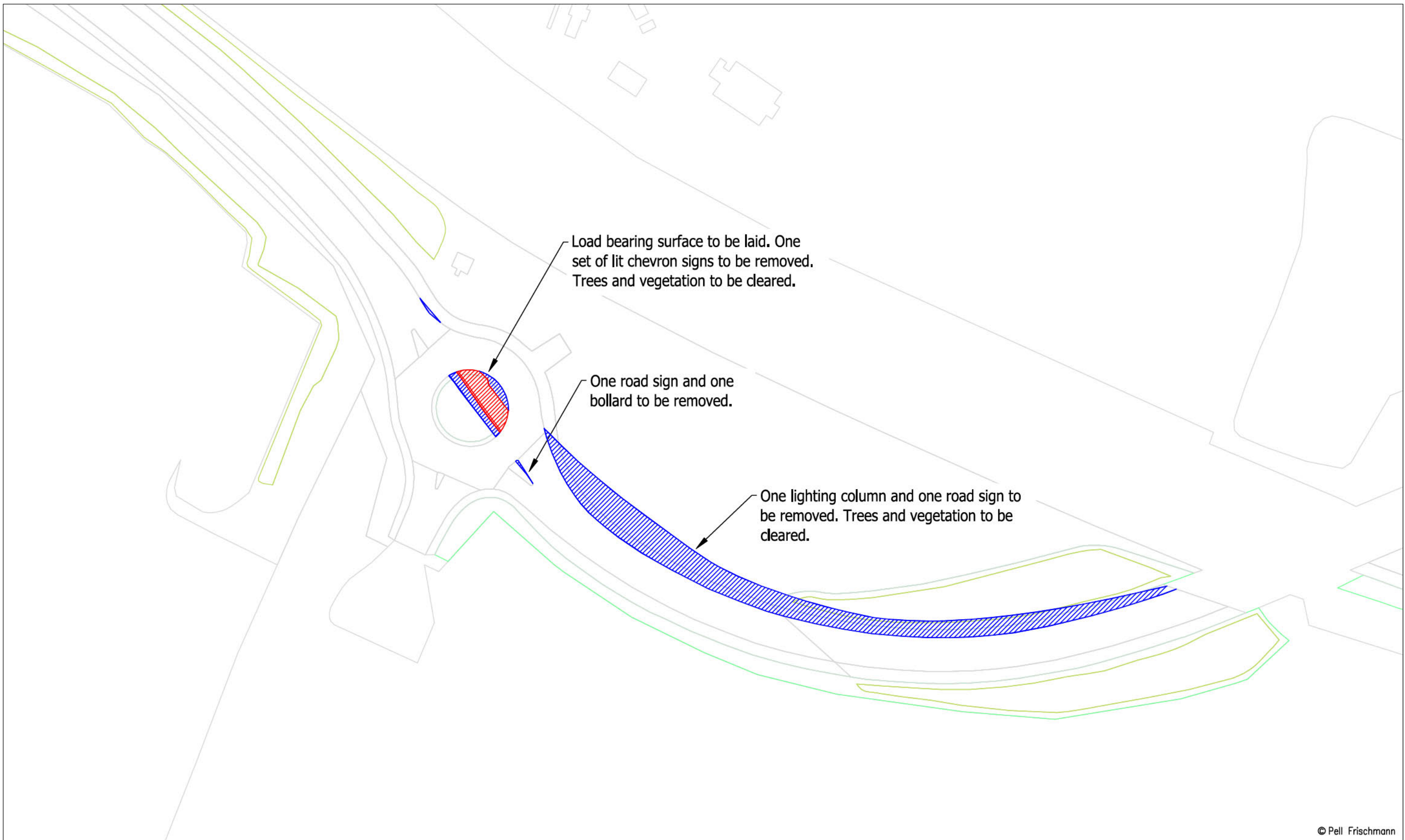
<b>Pell Frischmann</b> 93 GEORGE STREET, EDINBURGH, EH2 3ES Tel: +44 (0)131 240 1270 Email: pfe@pellfrischmann.com www.pellfrischmann.com		Project		Dunside Wind Farm		Drawn	SK	02/06/2022	Scale	1:500 @ A3	
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						Notes:		Revision		1	
						1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only.					



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EDF		SPA Location		Siemens SG170 Blade and Tower		Checked	GB	02/06/2022	Drawing Status
Key Wheel SPA   Body SPA   Load SPA   Indicative   Over-run   Over-sail		St Margaret Way Roundabout		Point of Interest		2		Draft	
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								Revision 1	



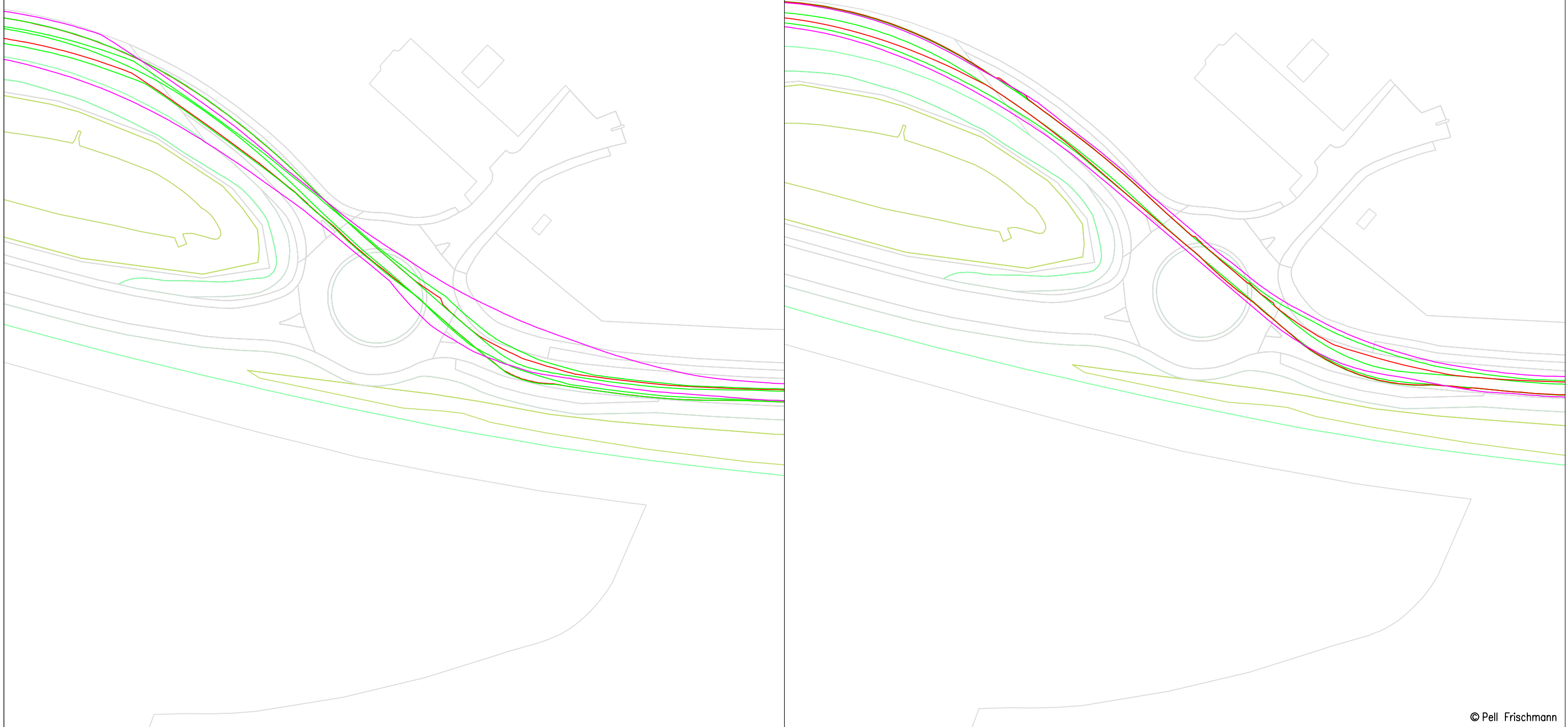


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<b>Pell Frischmann</b> 93 GEORGE STREET, EDINBURGH, EH2 3ES Tel: +44 (0)131 240 1270 Email: pfe@pellfrischmann.com www.pellfrischmann.com						Project			Name		Date	Scale		
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Client						Drawing Title			Point of Interest		Drawing Status			
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Key Wheel SPA   Body SPA   Load SPA   Indicative   Over-run   Over-sail						SPA Location			Drawing No.		Notes:		Revision	
						St Margaret Way Roundabout			SK02A		1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only.		1	

Blade

Tower



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Project

Dunside Wind Farm

	Name	Date	Scale
Drawn	SK	02/06/2022	1:1000 @ A3
Designed	SK	02/06/2022	File No. 200522 Dunside Tracking – CN.dwg
Checked	GB	02/06/2022	
Point of Interest			Drawing Status
3			Draft

Client

EDF

Drawing Title

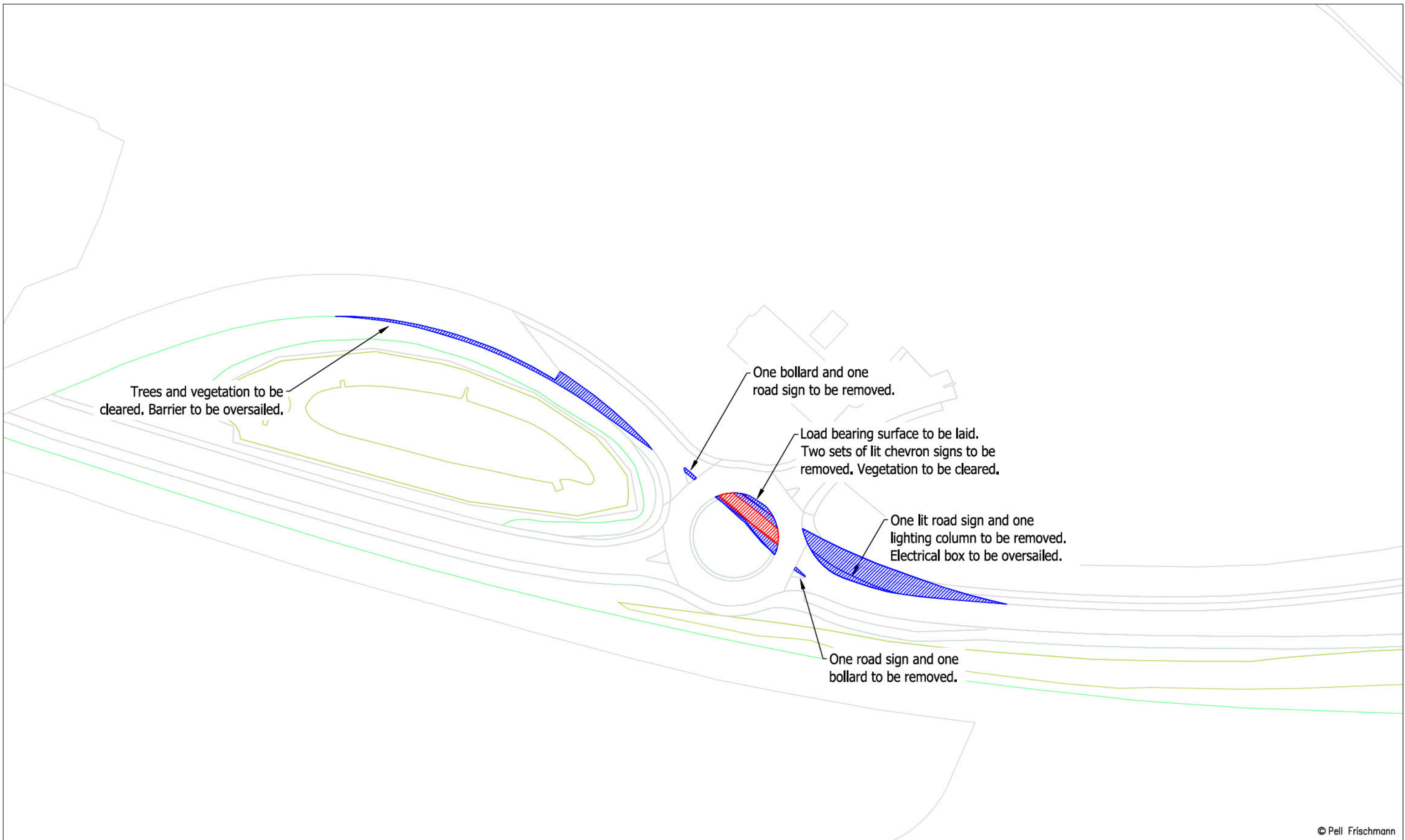
Siemens SG170 Blade and Tower

SPA Location

Dunsyre House Roundabout

Drawing No.	Notes:	Revision
SK03	1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only.	1

Key						
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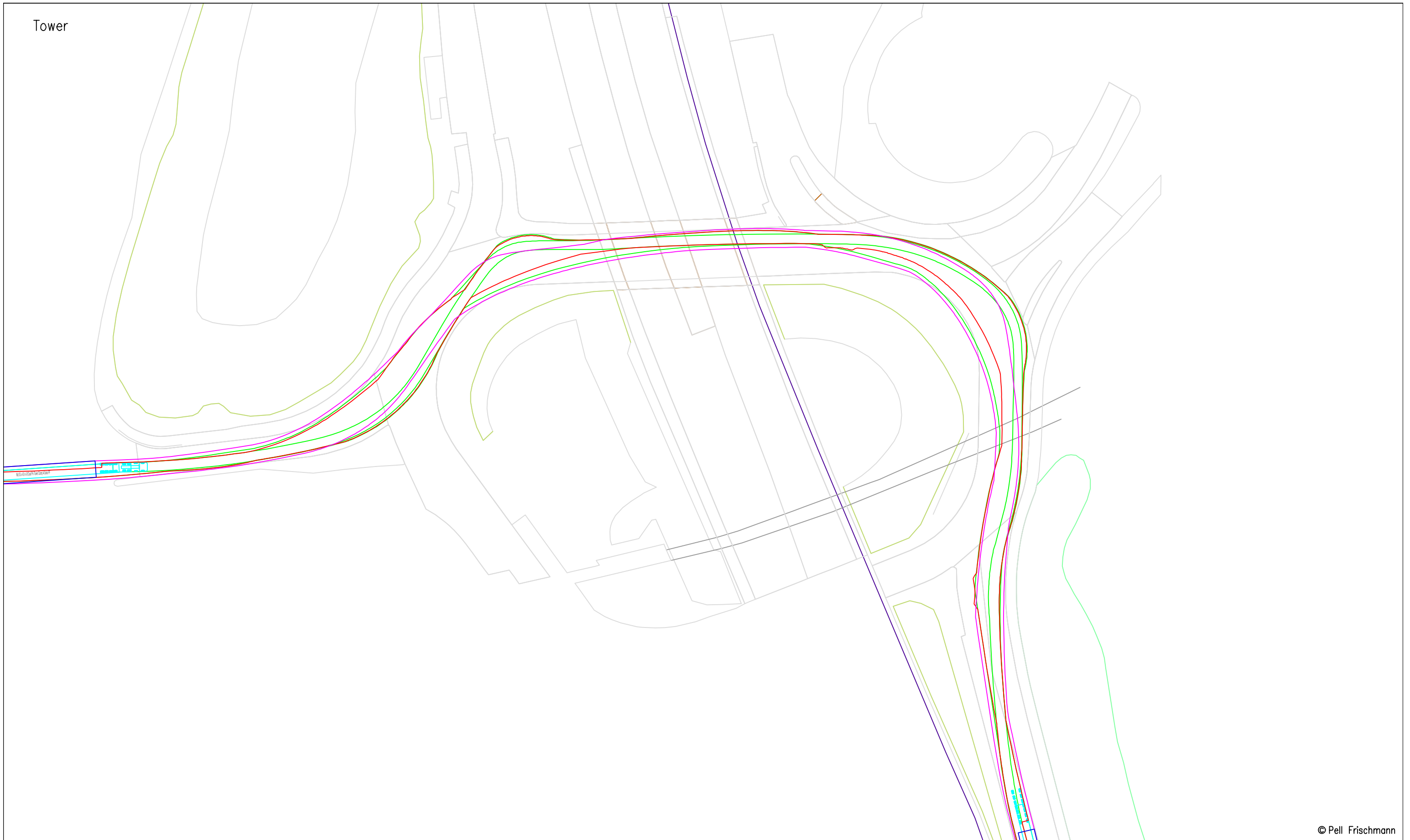


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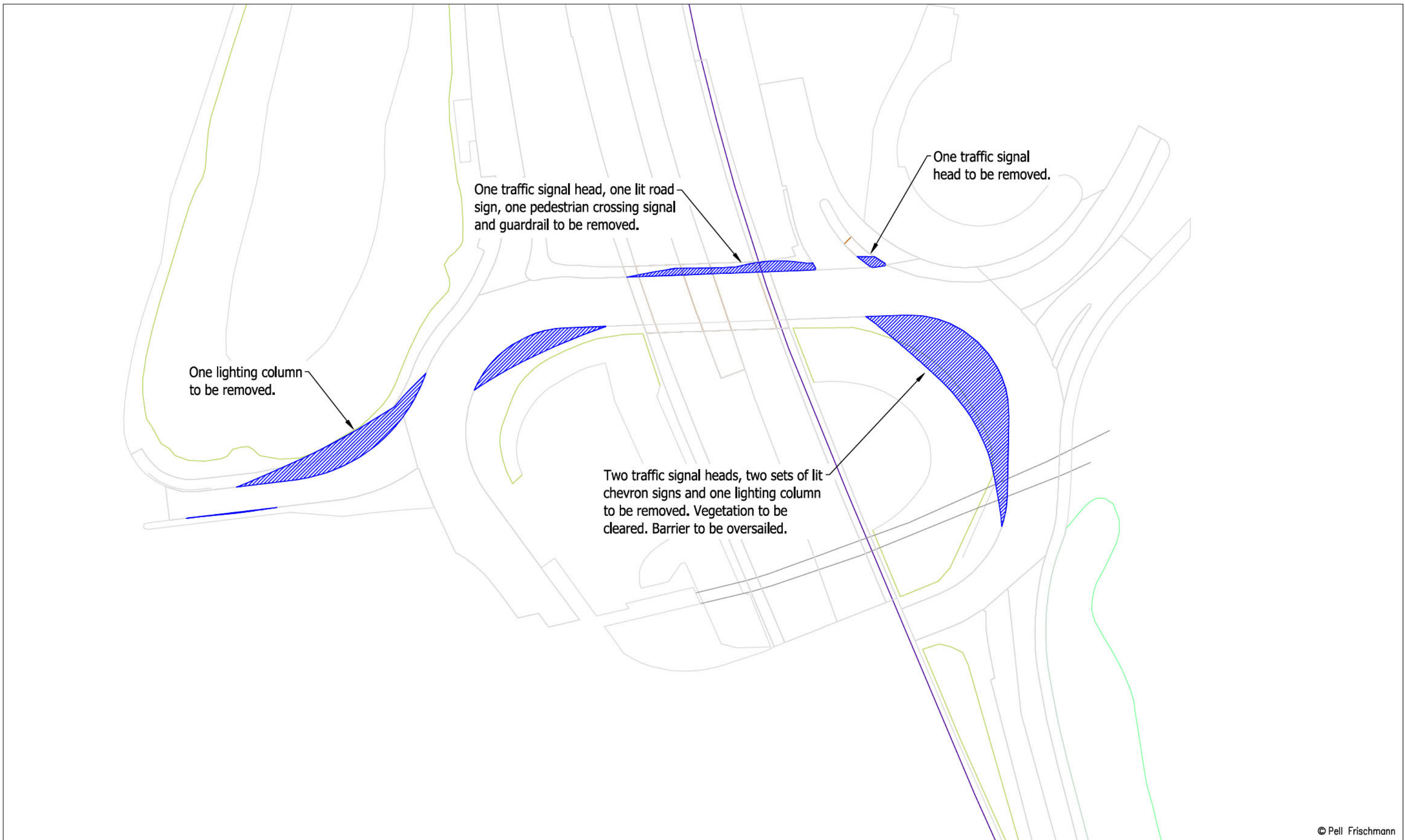


Tower



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<b>Pell Frischmann</b> 93 GEORGE STREET, EDINBURGH, EH2 3ES Tel: +44 (0)131 240 1270 Email: pfeinburgh@pellfrischmann.com www.pellfrischmann.com		Project		Dunside Wind Farm		Drawn	SK	02/06/2022	Scale 1:1000 @ A3
		Client		EDF		Designed	SK	02/06/2022	
Drawing Title		Siemens SG170 Blade and Tower		Checked	GB	02/06/2022	Drawing Status Draft		
SPA Location		B981 Ferrytoll Gyrotory		Point of Interest	4		Revision		
Key	Wheel SPA	Body SPA	Load SPA	Indicative	Over-run	Over-sail	Drawing No. SK04A	Notes: 1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only.	1



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						Dunside Wind Farm			SK		02/06/2022		1:1000 @ A3	
Client						Drawing Title			Designed		Date		File No.	
						Siemens SG170 Blade and Tower			SK		02/06/2022		200522 Dunside Tracking - CN.dwg	
Key Wheel SPA   Body SPA   Load SPA   Indicative   Over-run   Over-sail						SPA Location			Checked		Date		Drawing Status	
						B981 Ferrytoll Gyrotory			GB		02/06/2022		Draft	
						Point of Interest		4		Drawing No.		Revision		
						SK04B		Notes:		1		1		

1. All mitigation is subject to confirmation through a test run.  
 2. This is not a construction drawing and is intended for illustration purposes only.

Blade



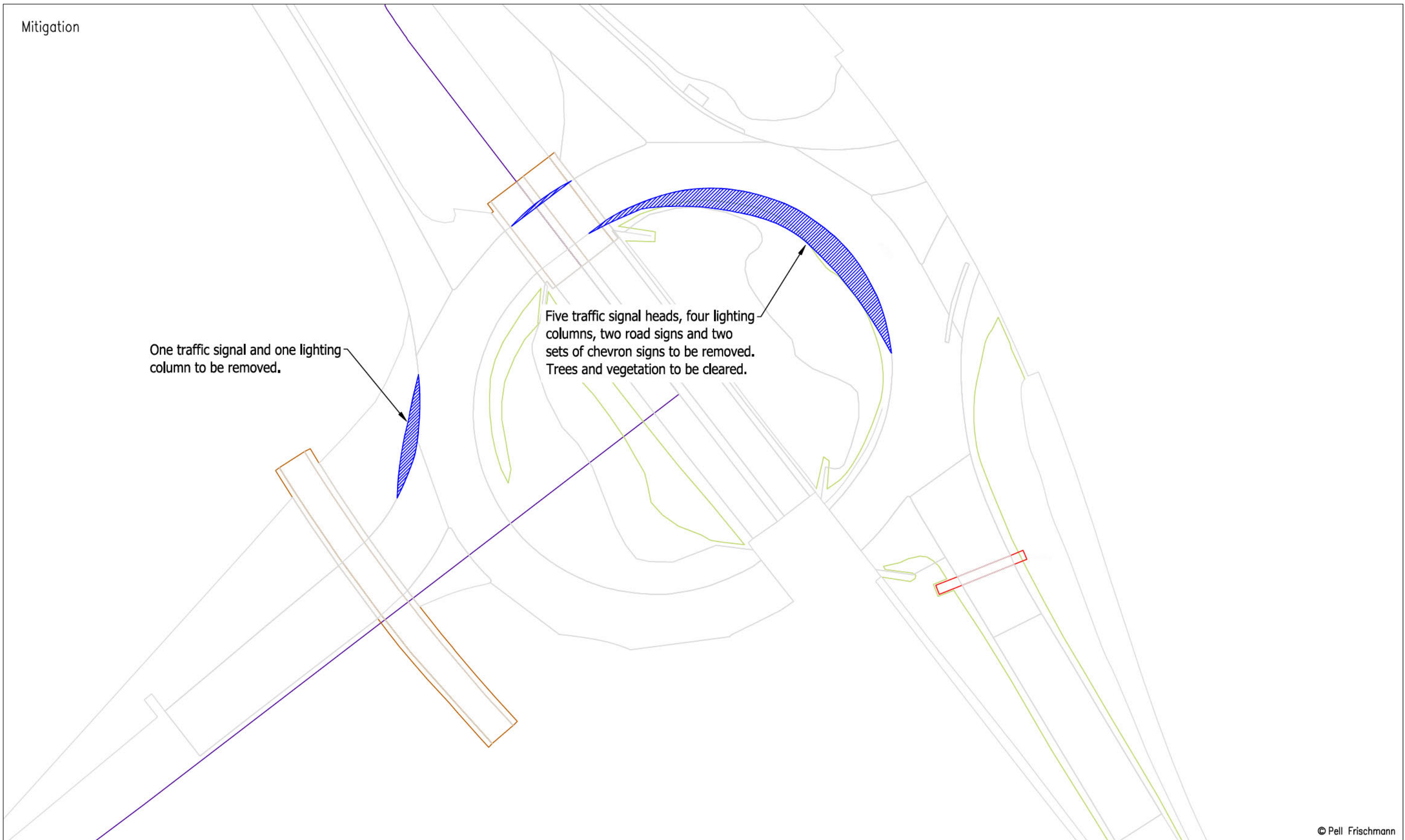
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		Client		Drawing Title		Designed	SK	02/06/2022	
EDF		SPA Location		Siemens SG170 Blade and Tower		Checked	GB	02/06/2022	Drawing Status Draft
Key Wheel SPA   Body SPA   Load SPA   Indicative   Over-run   Over-sail		M8 Hermiston Gait Roundabout		Point of Interest		9		Drawing No. SK05 Notes: 1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only.	





Mitigation

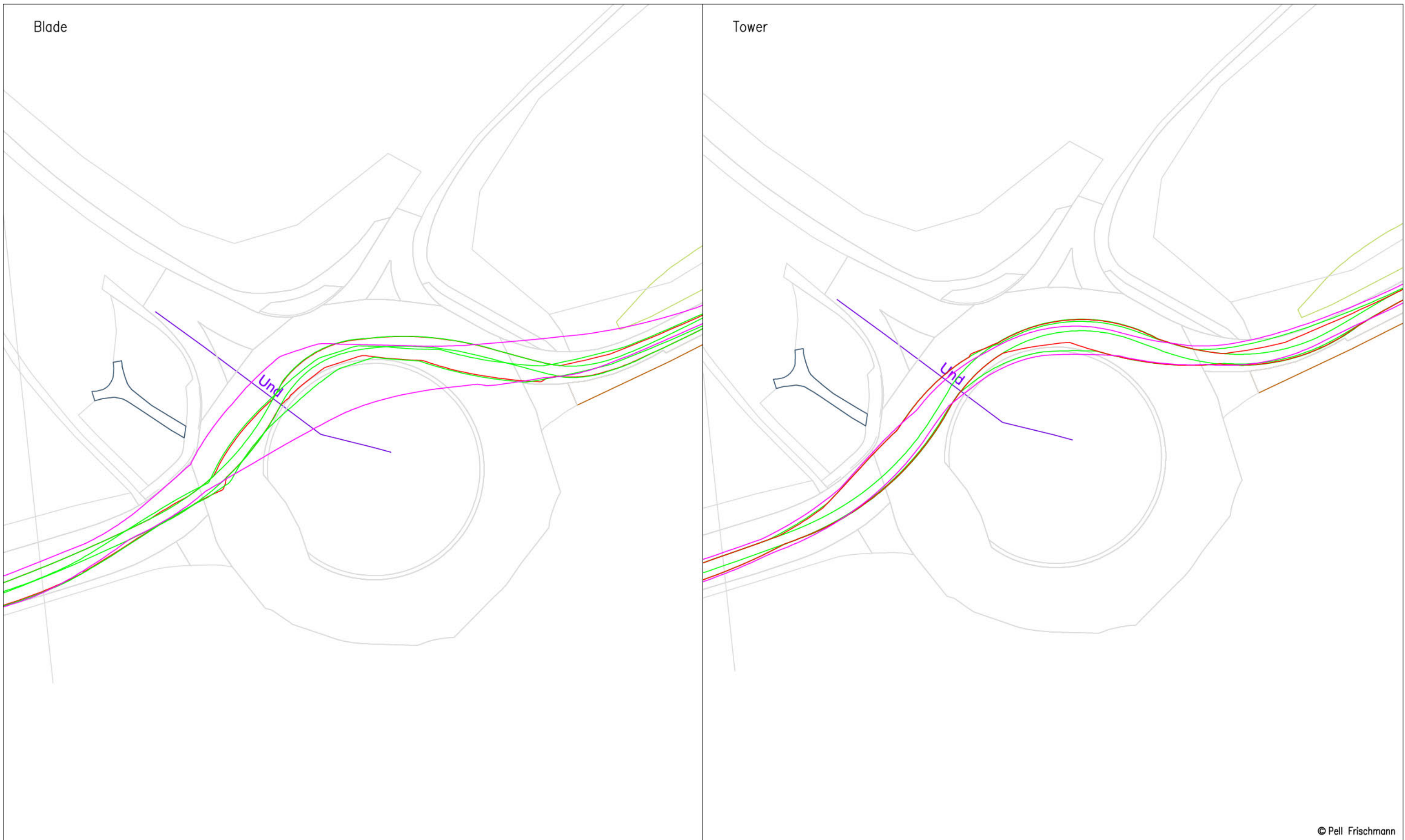


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		Client		Drawing Title		Point of Interest		Drawing No.		Revision	
EDF		Siemens SG170 Blade and Tower		9		SK		02/06/2022		1:1000 @ A3	
M8 Hermiston Gait Roundabout		SK05B		Notes:		1. All mitigation is subject to confirmation through a test run.		2. This is not a construction drawing and is intended for illustration purposes only.		1	
Key		Wheel SPA		Body SPA		Load SPA		Indicative		Over-run	
		Over-sail									

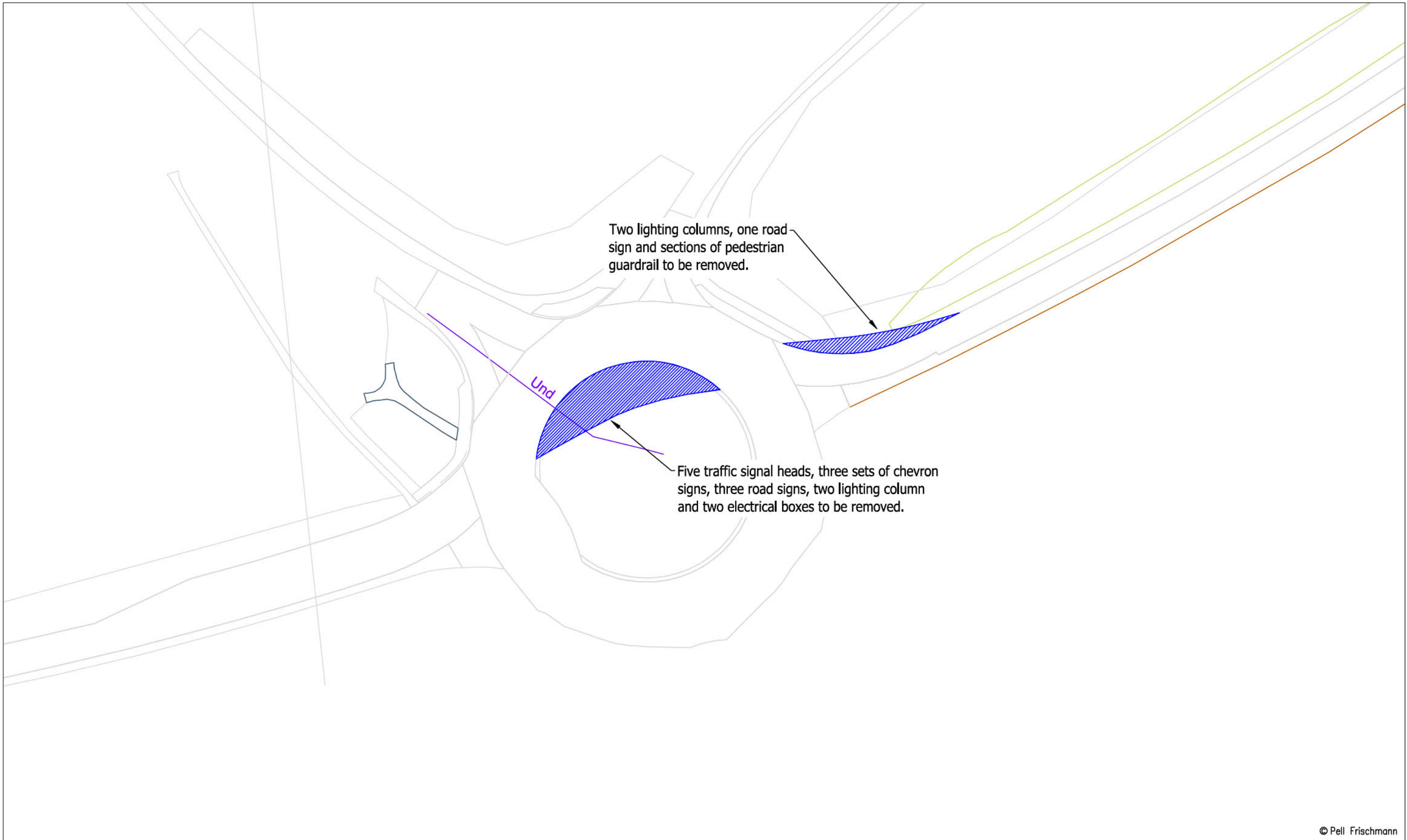
Blade

Tower



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		Client		Drawing Title		Point of Interest		Drawing No.		Revision	
EDF		Siemens SG170 Blade and Tower		10		SK06		Notes:		1	
Key		SPA Location		10		SK06		1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only.		1	
Wheel SPA	Body SPA	Load SPA	Indicative	Over-run	Over-sail	A720 Sheriffhall Roundabout					

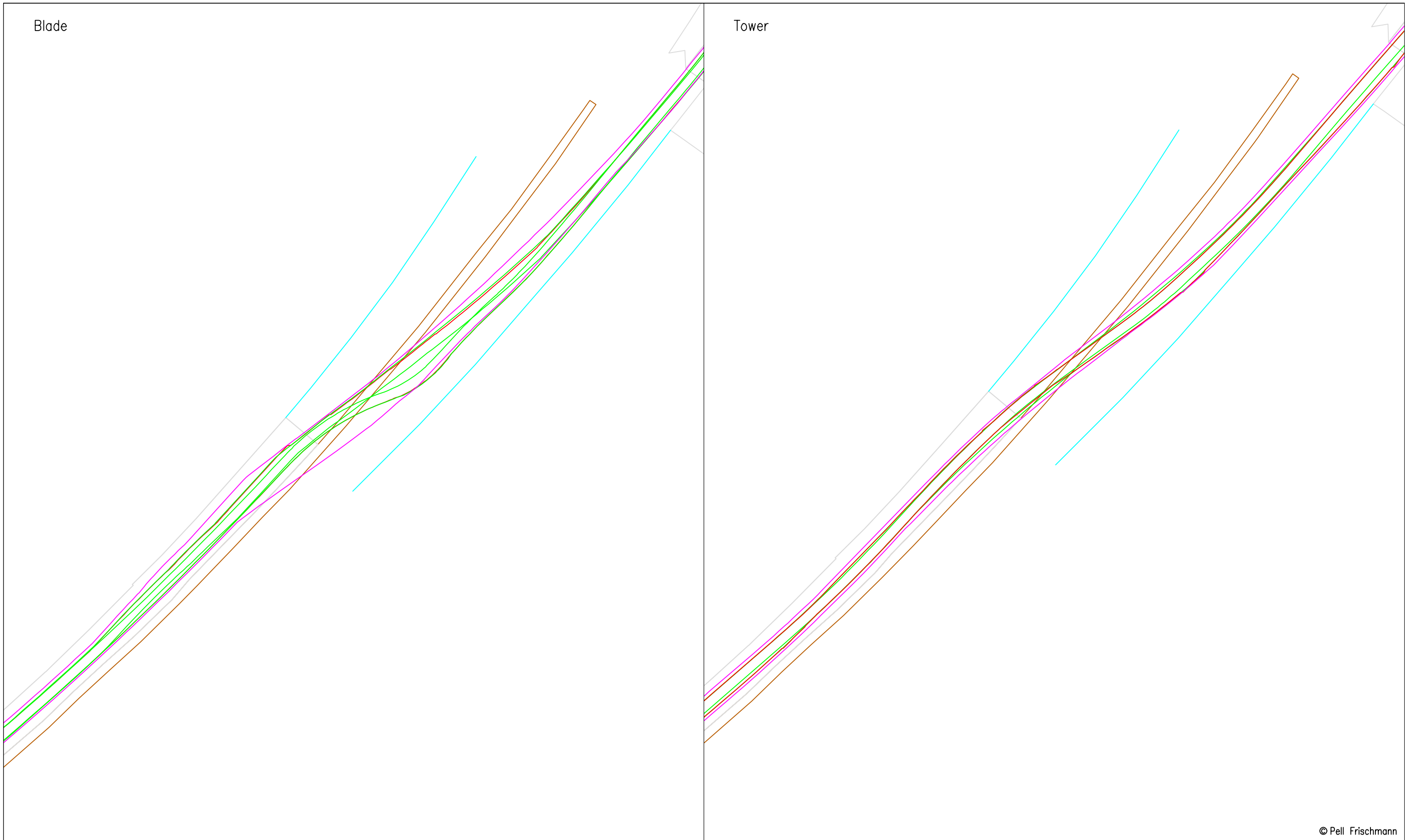


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						Dunside Wind Farm			1:1000 @ A3						
Client						Drawing Title			File No.						
						Siemens SG170 Blade and Tower			200522 Dunside Tracking – CN.dwg						
Key						SPA Location			Drawing Status						
						A720 Sheriffhall Roundabout			Draft						
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Wheel SPA	Body SPA	Load SPA	Indicative	Over-run	Over-sail										
						10		1							
						Drawing No.		Notes:							
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Blade

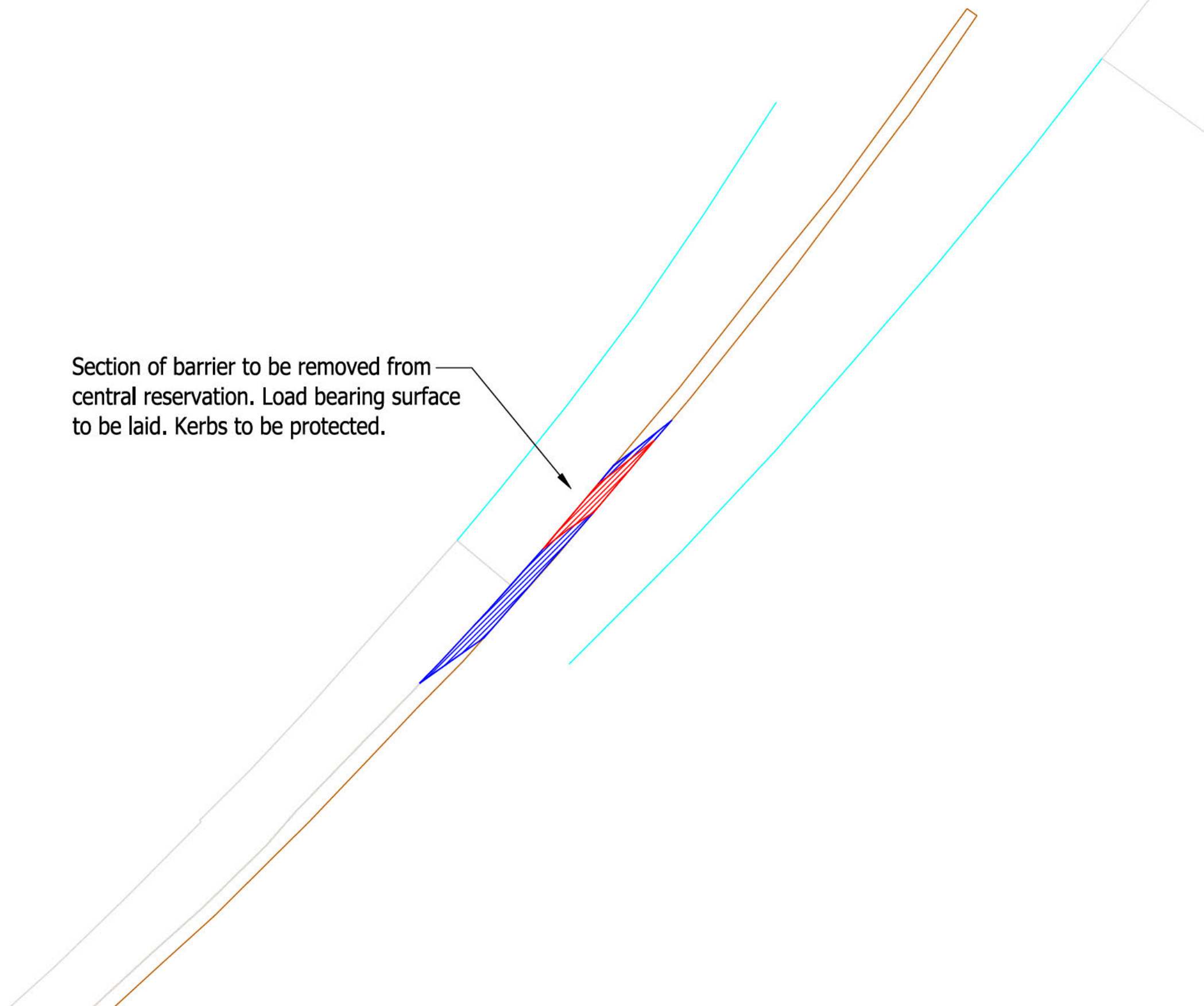
Tower



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		Client		Drawing Title		Point of Interest		Drawing No.		Revision	
EDF		Siemens SG170 Blade and Tower		11		SK		02/06/2022		1:1000 @ A3	
SPA Location		A720 Millerhill Junction		200522 Dunside Tracking – CN.dwg		SK		02/06/2022		Draft	
Key		Over-run		Over-sail		GB		02/06/2022		Notes:	
Wheel SPA		Body SPA		Load SPA		Indicative		Over-run		Over-sail	
										1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only.	
										1	

Section of barrier to be removed from central reservation. Load bearing surface to be laid. Kerbs to be protected.

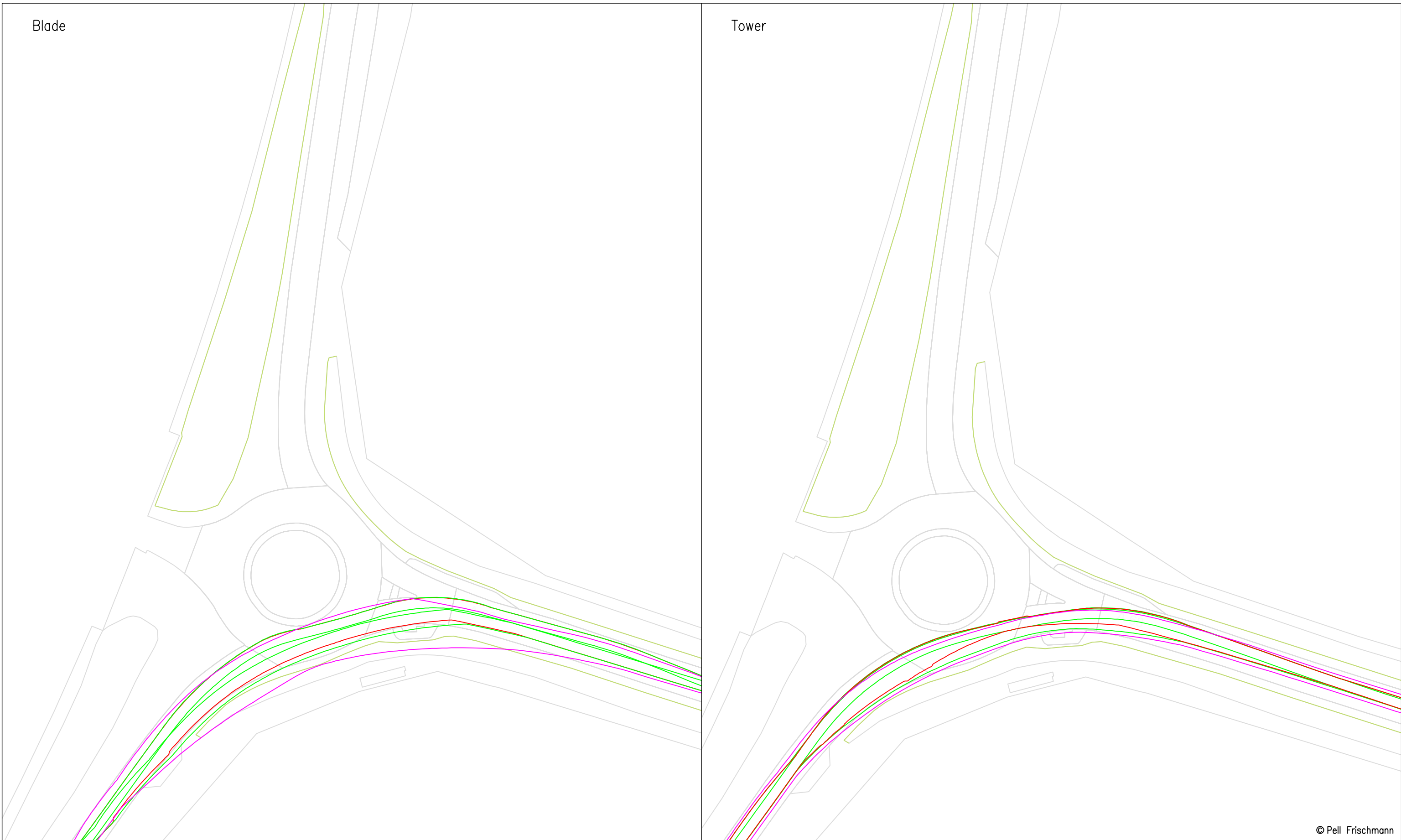


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						Dunside Wind Farm			1:1000 @ A3	
Client						Drawing Title			File No.	
						Siemens SG170 Blade and Tower			200522 Dunside Tracking – CN.dwg	
Key Wheel SPA   Body SPA   Load SPA   Indicative   Over-run   Over-sail						SPA Location			Drawing Status	
						A720 Millerhill Junction			Draft	
EDF						Point of Interest		Revision		
Drawing No. SK07A						Notes: 1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only.		1		

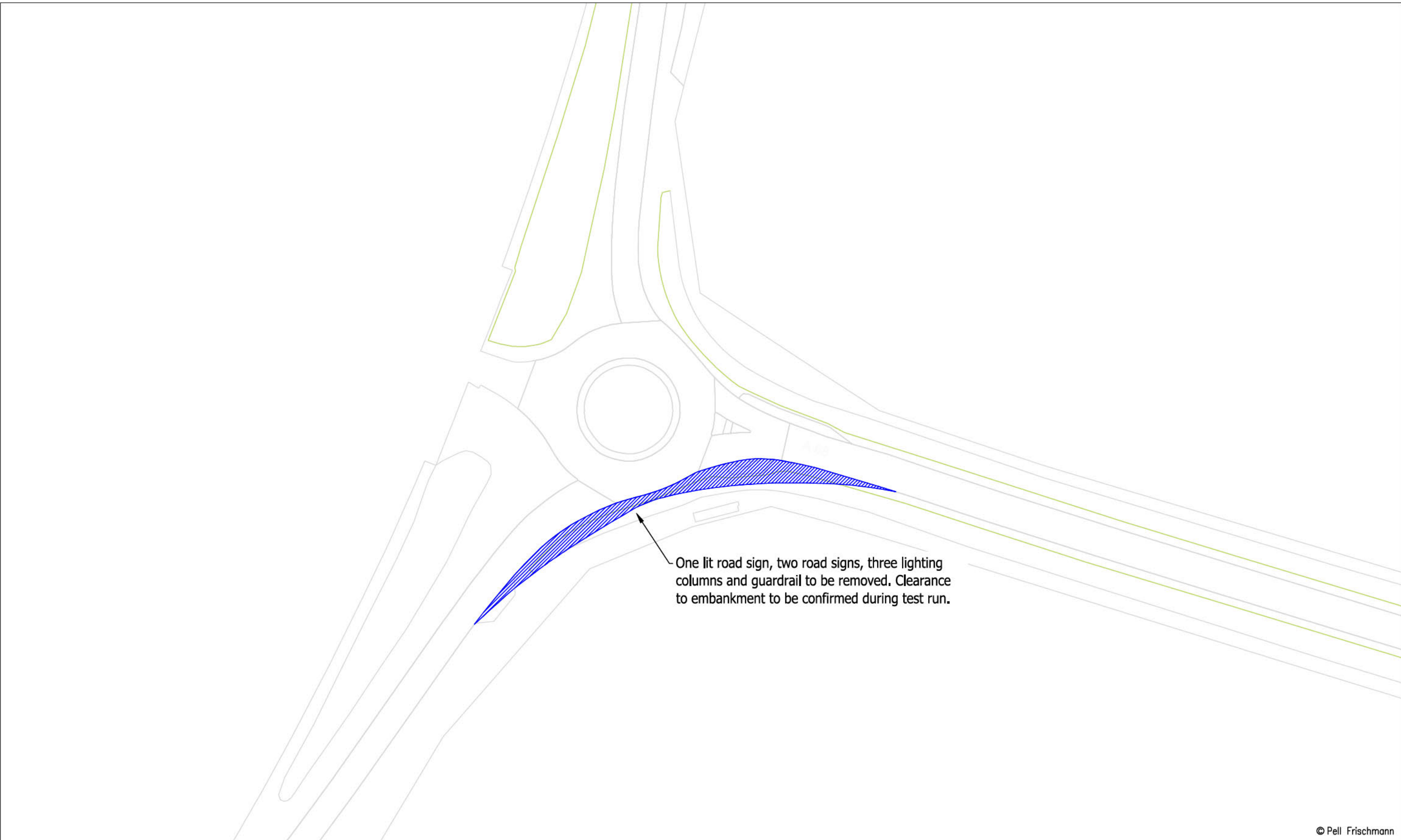
Blade

Tower



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		Client		Drawing Title		Point of Interest		Drawing No.		Revision	
EDF		Siemens SG170 Blade and Tower		12		SK		02/06/2022		1:1000 @ A3	
SPA Location		A720 Slip Road / A68 Roundabout		2		SK		02/06/2022		File No. 200522 Dunside Tracking - CN.dwg	
Key						GB		02/06/2022		Drawing Status	
Wheel SPA		Body SPA		Load SPA		Indicative		Over-run		Over-sail	
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										1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only.	
						SK08				1	

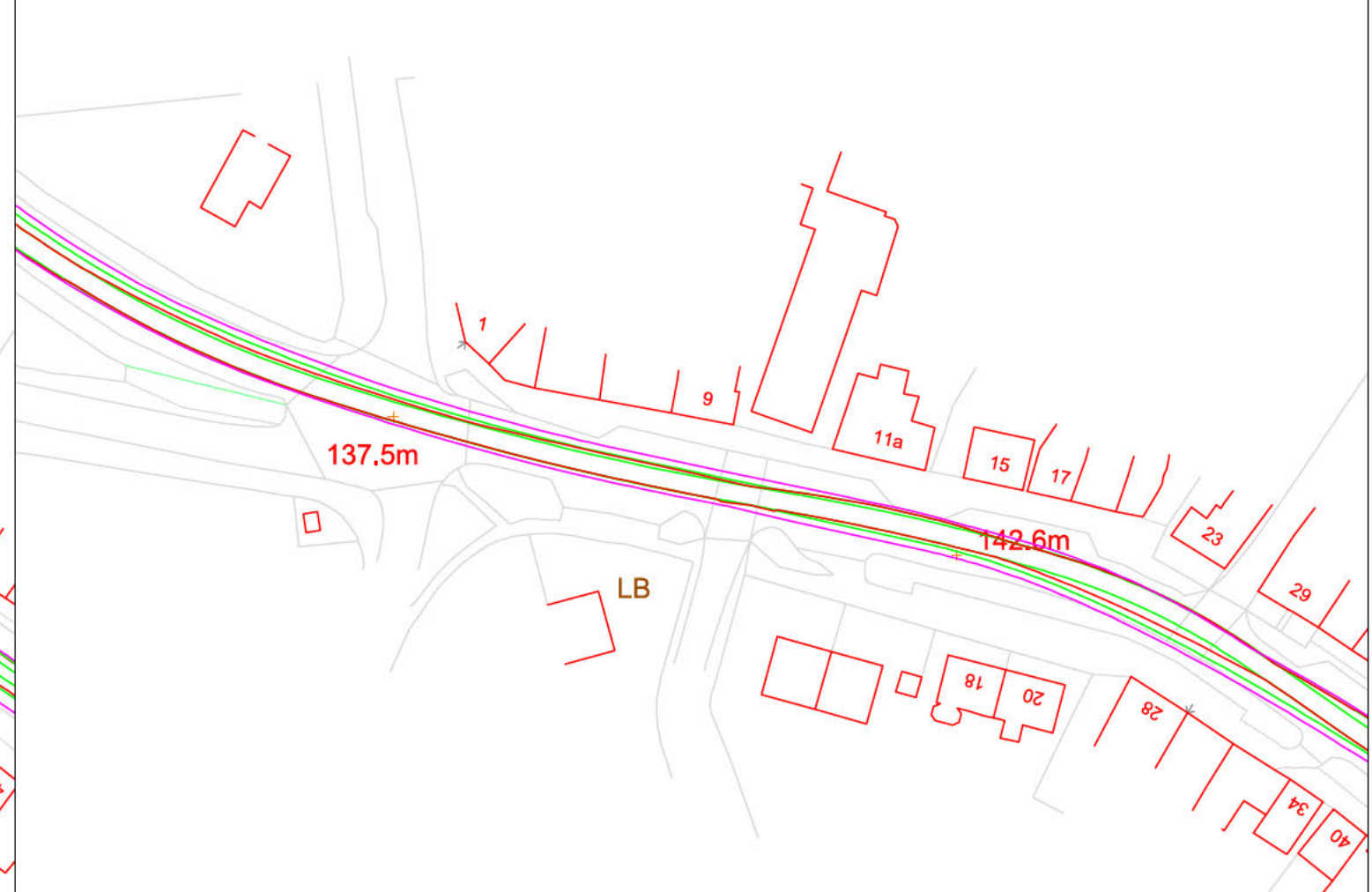
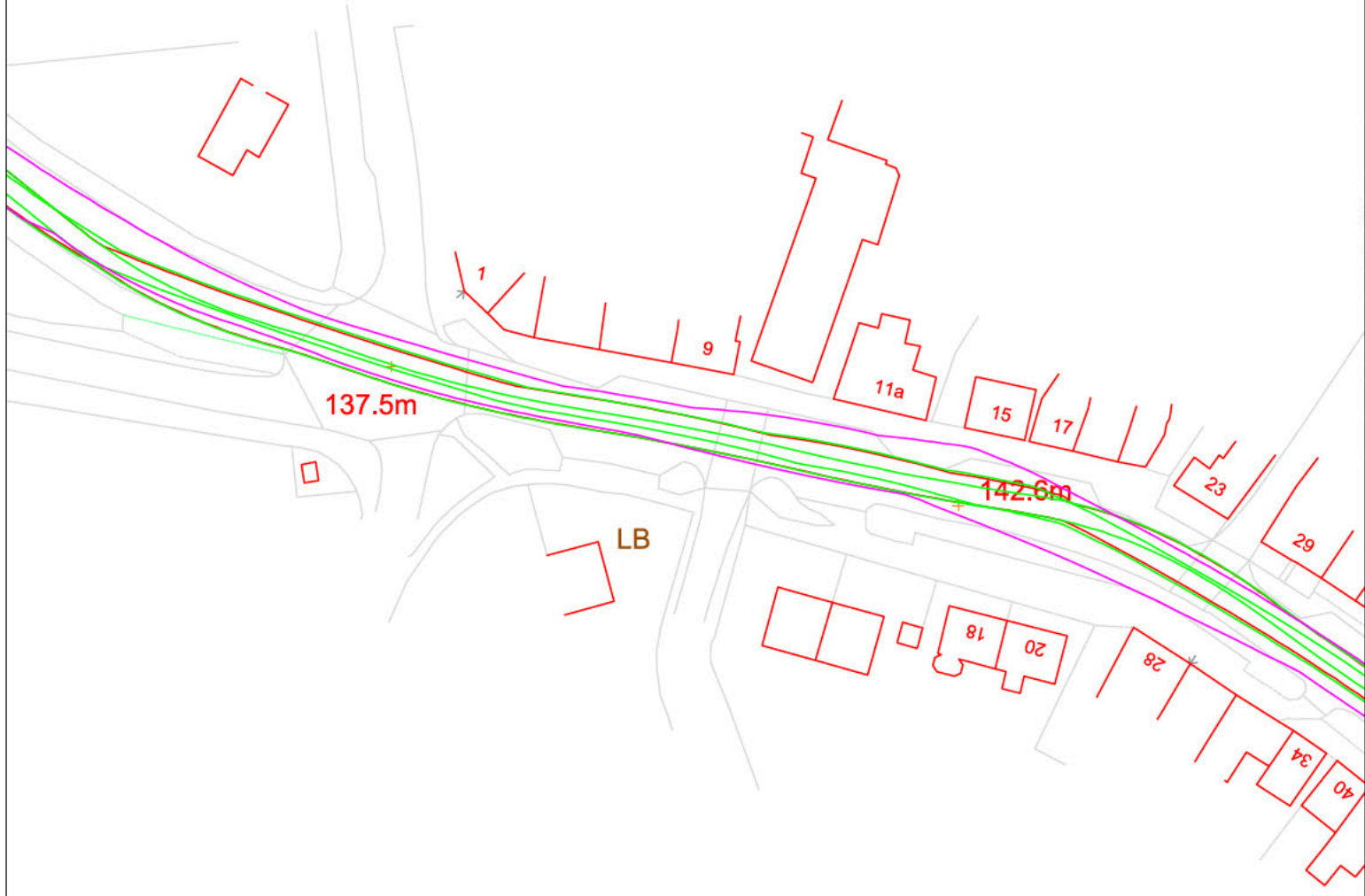


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						Dunside Wind Farm			SK		02/06/2022		1:1000 @ A3	
Client						Drawing Title			Point of Interest		Drawing Status			
						Siemens SG170 Blade and Tower			12		Draft			
Key Wheel SPA   Body SPA   Load SPA   Indicative   Over-run   Over-sail						SPA Location			Drawing No.		Notes:		Revision	
						A720 Slip Road / A68 Roundabout			SK08A		1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only.		1	

Blade

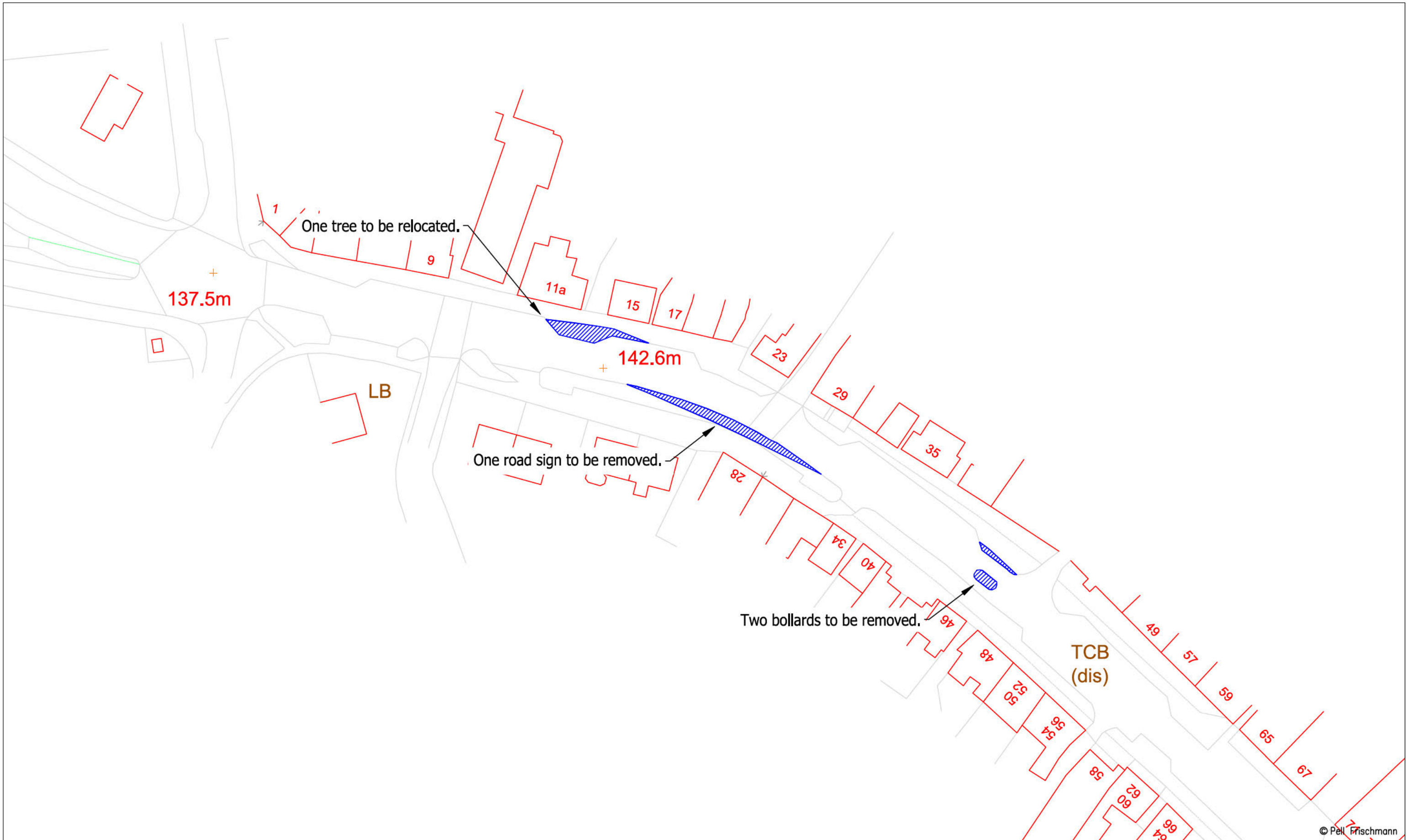
Tower



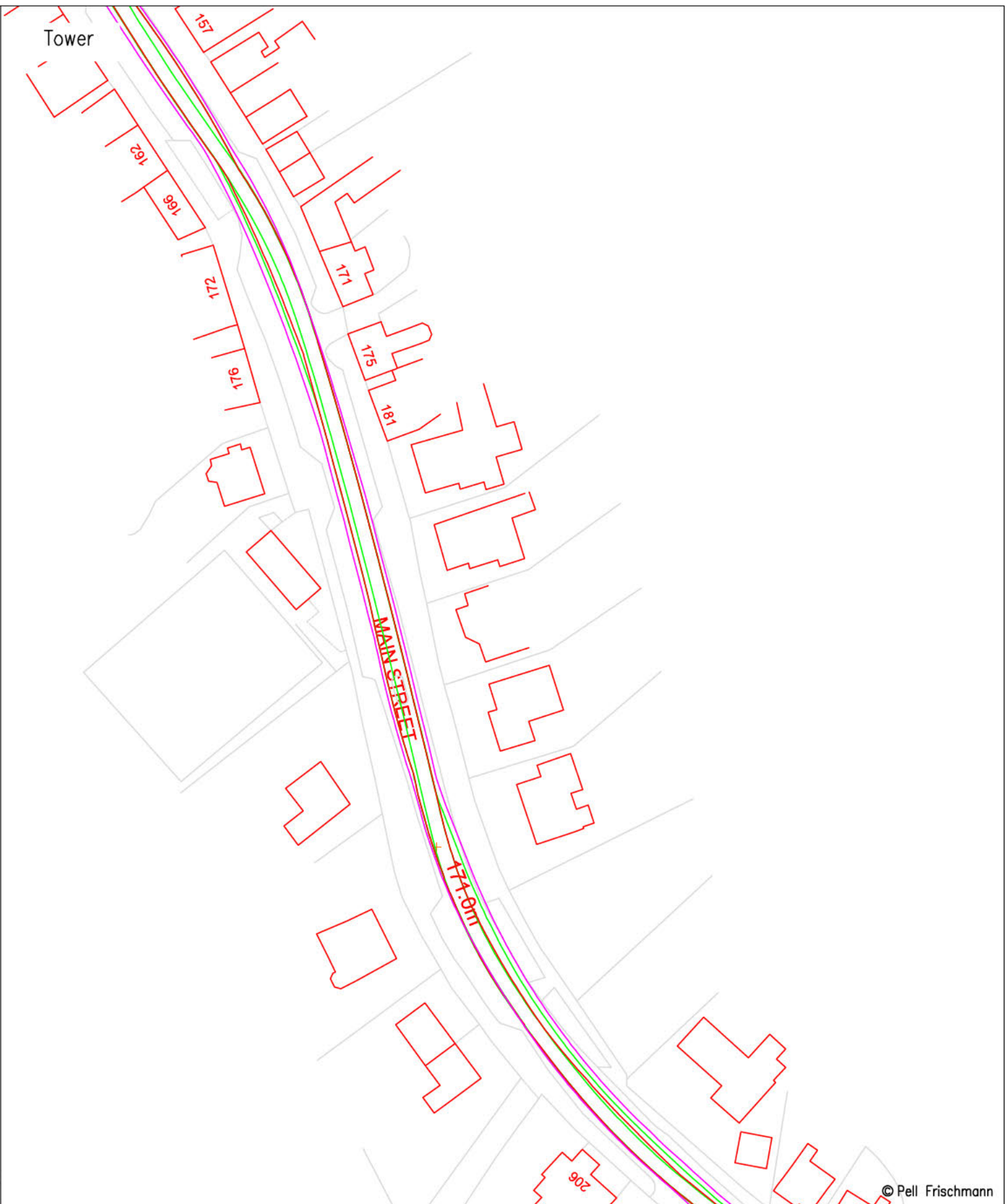
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		Client		Drawing Title		Designed	SK	02/06/2022	File No.	200522 Dunside Tracking – CN.dwg														
EDF		SPA Location		Checked	GB	02/06/2022	Drawing Status	Draft																
<table border="1"> <tr> <th>Key</th> <td><span style="color:red">—</span></td> <td><span style="color:green">—</span></td> <td><span style="color:magenta">—</span></td> <td><span style="color:cyan">—</span></td> <td><span style="border: 1px solid red; display: inline-block; width: 10px; height: 10px;"></span></td> <td><span style="border: 1px solid blue; display: inline-block; width: 10px; height: 10px;"></span></td> </tr> <tr> <td></td> <td>Wheel SPA</td> <td>Body SPA</td> <td>Load SPA</td> <td>Indicative</td> <td>Over-run</td> <td>Over-sail</td> </tr> </table>		Key	<span style="color:red">—</span>	<span style="color:green">—</span>	<span style="color:magenta">—</span>	<span style="color:cyan">—</span>	<span style="border: 1px solid red; display: inline-block; width: 10px; height: 10px;"></span>	<span style="border: 1px solid blue; display: inline-block; width: 10px; height: 10px;"></span>		Wheel SPA	Body SPA	Load SPA	Indicative	Over-run	Over-sail	SPA Location		A68 Pathhead – Main Street		Point of Interest	14 & 15		Drawing No.	SK09
Key	<span style="color:red">—</span>	<span style="color:green">—</span>	<span style="color:magenta">—</span>	<span style="color:cyan">—</span>	<span style="border: 1px solid red; display: inline-block; width: 10px; height: 10px;"></span>	<span style="border: 1px solid blue; display: inline-block; width: 10px; height: 10px;"></span>																		
	Wheel SPA	Body SPA	Load SPA	Indicative	Over-run	Over-sail																		
						Notes:		Revision																
						1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only.		1																





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		Client		Drawing Title		Drawn		Designed		File No.	
EDF		Siemens SG170 Blade and Tower		Checked		GB		02/06/2022		Drawing Status	
SPA Location		A68 Pathhead – Main Street		Point of Interest		14 & 15		Revision		Draft	
Key				Drawing No.		SK09A		Notes:		1	
Wheel SPA		Body SPA		Load SPA		Indicative		Over-run		Over-sail	
								1. All mitigation is subject to confirmation through a test run.		2. This is not a construction drawing and is intended for illustration purposes only.	



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 www.pellfrischmann.com

Client: EDF

Key						
	Wheel SPA	Body SPA	Load SPA	Indicative	Over-run	Over-sail

Project: Dunside Wind Farm

Drawing Title: Siemens SG170 Blade and Tower

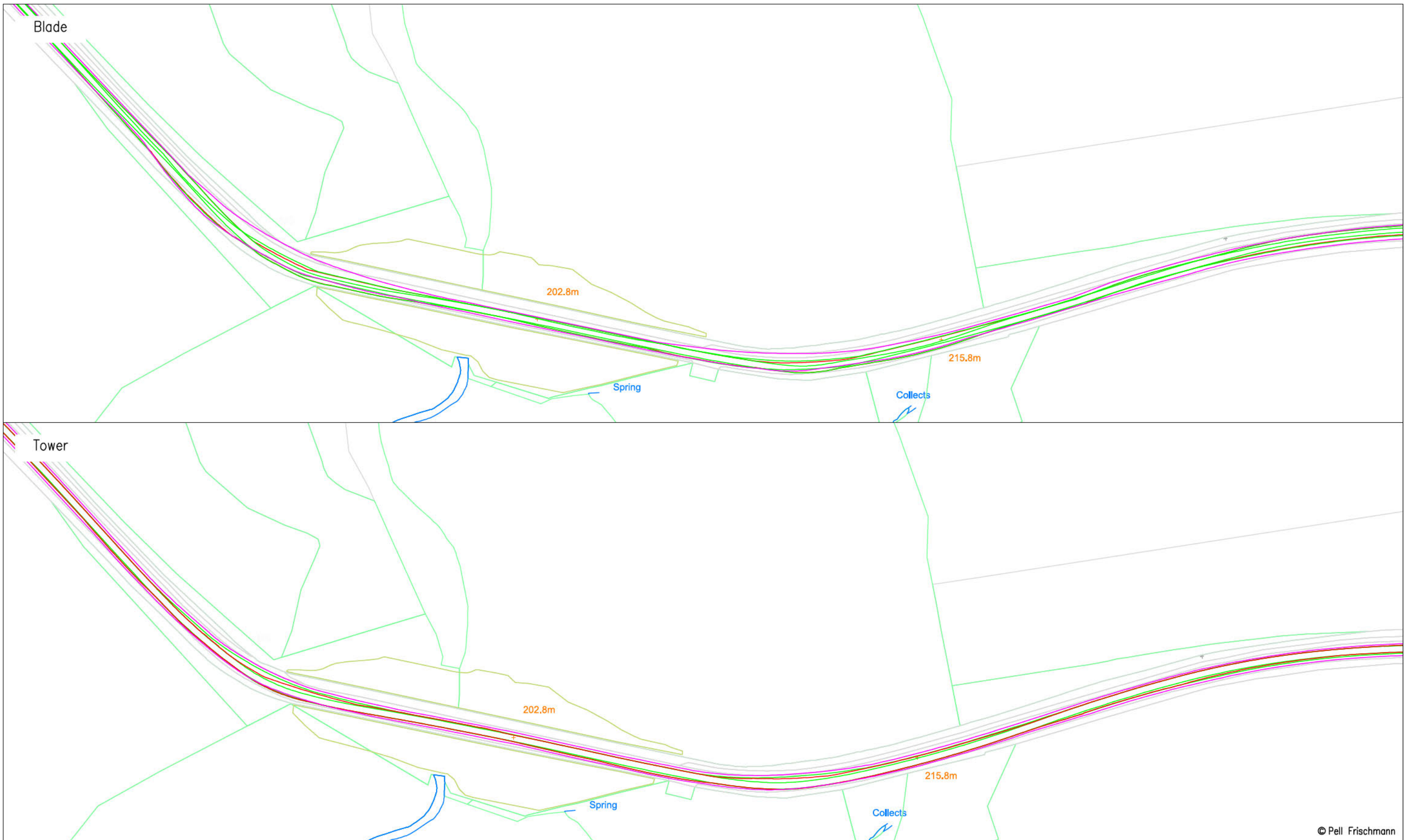
SPA Location: A68 Pathhead – Roman Camp

Drawn	SK	02/06/2022	Scale	1:1500@ A3
Designed	SK	02/06/2022	File No.	200522 Dunside Tracking – CN.dwg
Checked	GB	02/06/2022	Drawing Status	Draft
Point of Interest	16		Drawing No.	SK10
Notes:			Revision	
1. All mitigation is subject to confirmation through a test run.			1	
2. This is not a construction drawing and is intended for illustration purposes only.				



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						Client			EDF			Drawing Title			Siemens SG170 Blade and Tower																																															
Key						SPA Location			A68 Pathhead – Roman Camp			<table border="1"> <tr> <td>Drawn</td> <td>SK</td> <td>02/06/2022</td> <td rowspan="3">Scale</td> <td colspan="2">1:500 @ A3</td> </tr> <tr> <td>Designed</td> <td>SK</td> <td>02/06/2022</td> <td rowspan="2">File No.</td> <td colspan="2">200522 Dunside Tracking – CN.dwg</td> </tr> <tr> <td>Checked</td> <td>GB</td> <td>02/06/2022</td> <td rowspan="2">Drawing Status</td> <td colspan="2">Draft</td> </tr> <tr> <td colspan="3">Point of Interest</td> <td colspan="3">16</td> </tr> <tr> <td colspan="3">Drawing No.</td> <td colspan="3">SK10A</td> <td colspan="3">Notes:</td> <td colspan="3">Revision</td> </tr> <tr> <td colspan="3"></td> <td colspan="3"></td> <td colspan="3">         1. All mitigation is subject to confirmation through a test run.          2. This is not a construction drawing and is intended for illustration purposes only.       </td> <td colspan="3">1</td> </tr> </table>			Drawn	SK	02/06/2022	Scale	1:500 @ A3		Designed	SK	02/06/2022	File No.	200522 Dunside Tracking – CN.dwg		Checked	GB	02/06/2022	Drawing Status	Draft		Point of Interest			16			Drawing No.			SK10A			Notes:			Revision									1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only.			1		
Drawn	SK	02/06/2022	Scale	1:500 @ A3																																																										
Designed	SK	02/06/2022		File No.	200522 Dunside Tracking – CN.dwg																																																									
Checked	GB	02/06/2022			Drawing Status	Draft																																																								
Point of Interest			16																																																											
Drawing No.			SK10A			Notes:			Revision																																																					
						1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only.			1																																																					
<table border="1"> <tr> <td>Wheel SPA</td> <td>Body SPA</td> <td>Load SPA</td> <td>Indicative</td> <td>Over-run</td> <td>Over-sail</td> </tr> </table>						Wheel SPA	Body SPA	Load SPA	Indicative	Over-run	Over-sail																																																			
Wheel SPA	Body SPA	Load SPA	Indicative	Over-run	Over-sail																																																									



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Client: EDF

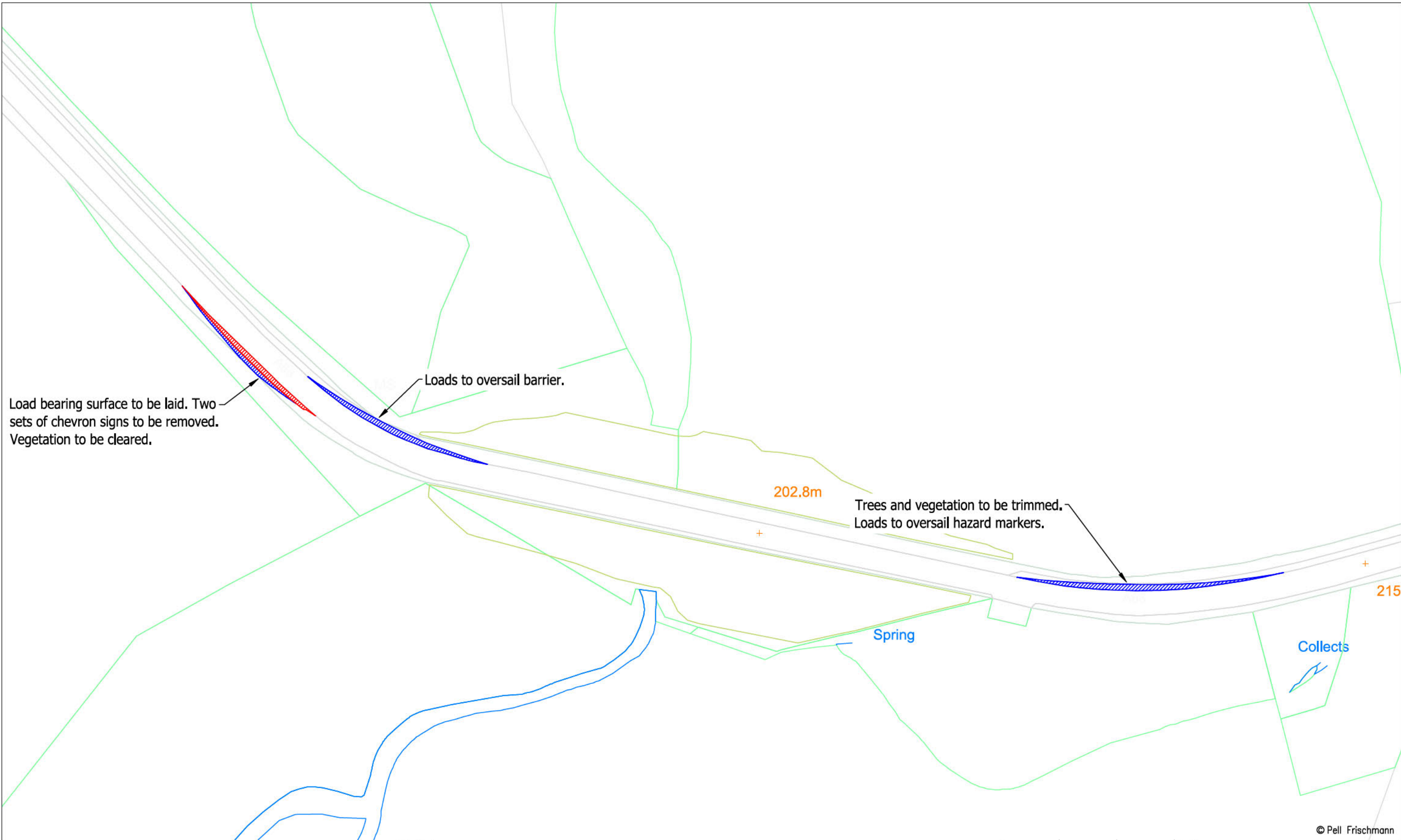
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	Wheel SPA	Body SPA	Load SPA	Indicative	Over-run	Over-sail

Project: Dunside Wind Farm

Drawing Title: Siemens SG170 Blade and Tower

SPA Location: A68 South of Fala Dam Bends

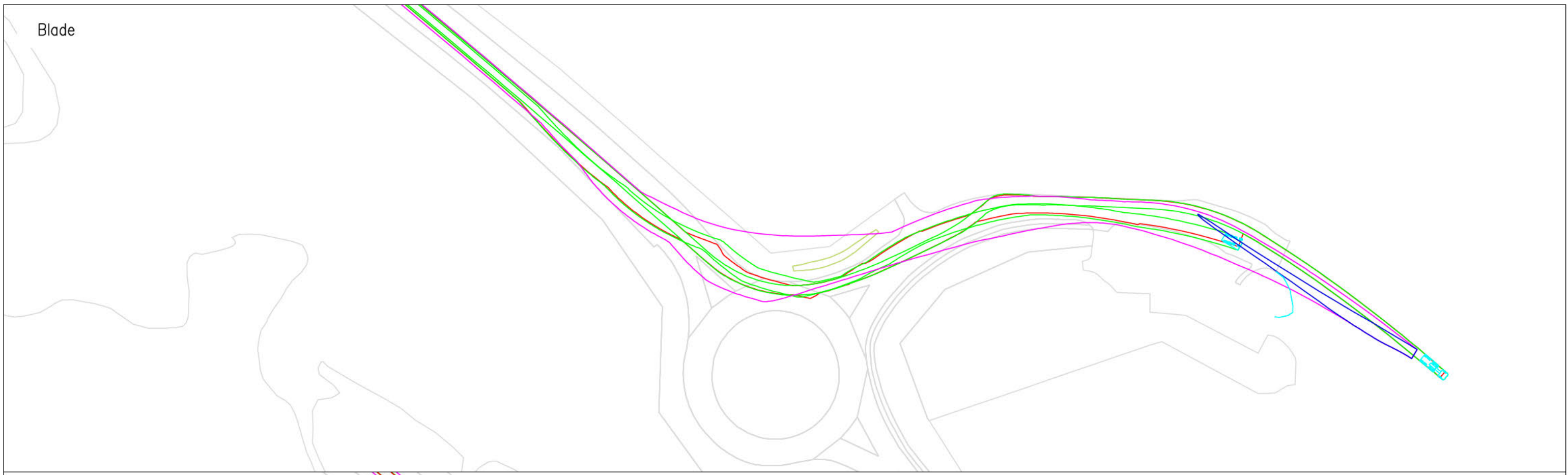
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Checked	GB	02/06/2022	Drawing Status	Draft
Point of Interest	21		Drawing No.	SK11
Notes:				Revision
1. All mitigation is subject to confirmation through a test run.				1
2. This is not a construction drawing and is intended for illustration purposes only.				



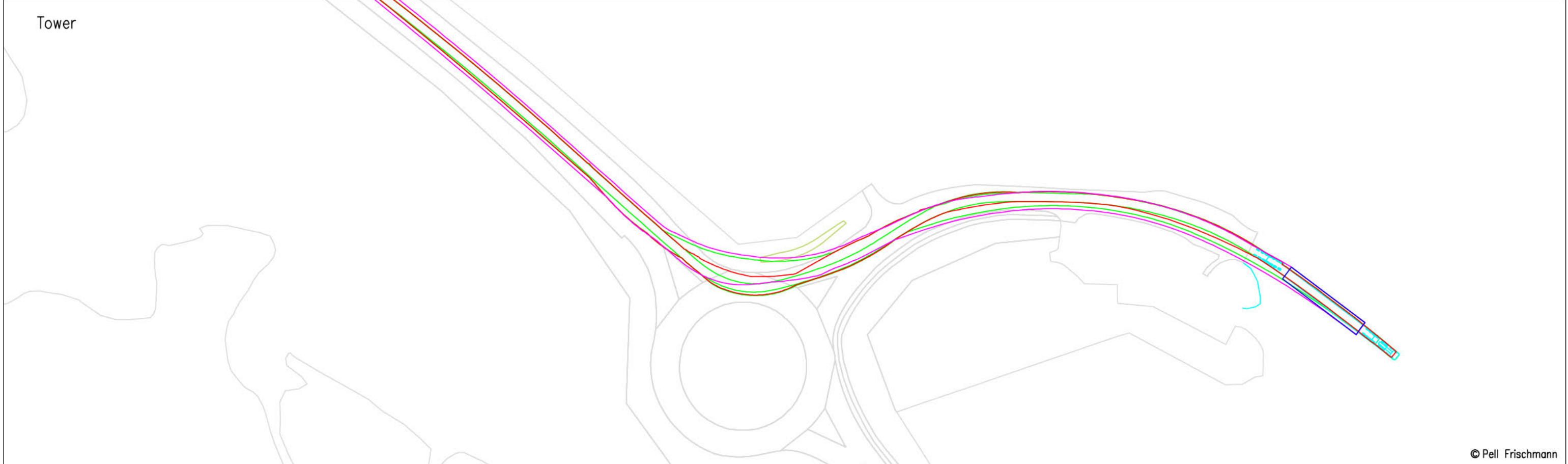
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		Client		Drawing Title		Designed	SK	02/06/2022	
EDF		Siemens SG170 Blade and Tower		Checked	GB	02/06/2022	Drawing Status Draft		
Key		SPA Location		Point of Interest		Drawing No.		Notes: 1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only.	Revision 1
Wheel SPA	Body SPA	Load SPA	Indicative	Over-run	Over-sail	A68 South of Fala Dam Bends			

Blade



Tower



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Project

Dunside Wind Farm

	Name	Date
Drawn	SK	02/06/2022
Designed	SK	02/06/2022
Checked	GB	02/06/2022

Scale 1:1250 @ A3

File No. 200522 Dunside Tracking - CN.dwg

Drawing Status Draft

Point of Interest 26 & 27

Drawing No. SK12

Notes:  
1. All mitigation is subject to confirmation through a test run.  
2. This is not a construction drawing and is intended for illustration purposes only.

Revision 1

Client

EDF

Drawing Title

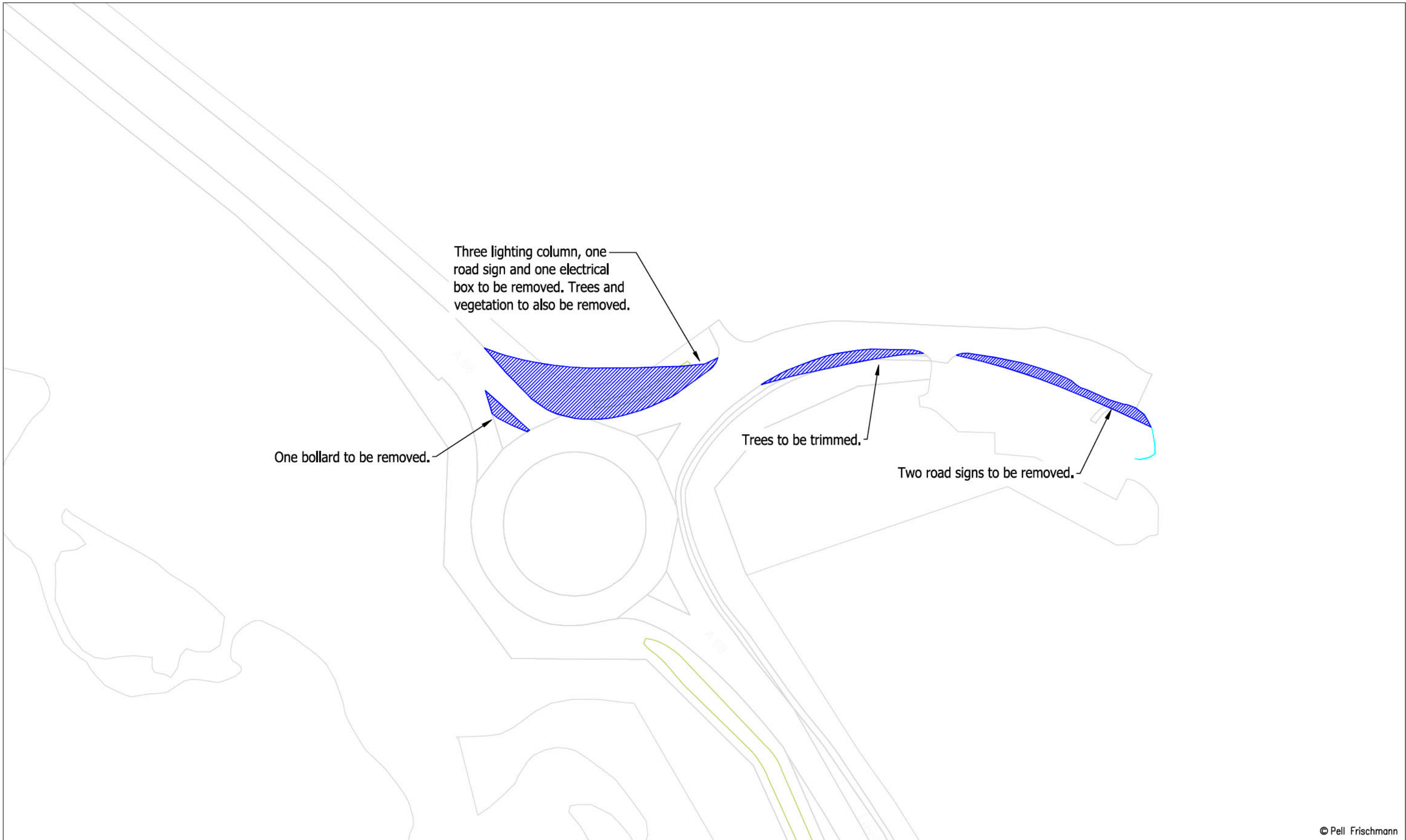
Siemens SG170 Blade and Tower

SPA Location

A68 Carfraemill Roundabout and Bend

Key

Wheel SPA	Body SPA	Load SPA	Indicative	Over-run	Over-sail



Three lighting column, one road sign and one electrical box to be removed. Trees and vegetation to also be removed.

One bollard to be removed.

Trees to be trimmed.

Two road signs to be removed.

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						Client			EDF			Drawing Title			Siemens SG170 Blade and Tower					
Key						SPA Location			A68 Carfraemill Roundabout and Bend											
Wheel SPA		Body SPA		Load SPA		Indicative		Over-run		Over-sail		Drawing No. SK12A		Notes: 1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only.		Revision 1				
						Point of Interest			26 & 27			Drawing Status Draft								
						Name			Date			Scale			1:500 @ A3					
						Drawn			SK			02/06/2022			File No.			200522 Dunside Tracking - CN.dwg		
						Designed			SK			02/06/2022			Drawing Status			Draft		
						Checked			GB			02/06/2022								



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		Client		Drawing Title		Drawn	2022/06/02	1:1250 @ A3													
Client <b>EDF</b>		Drawing Title <b>Siemens SG170 Blade and Tower</b>		SPA Location <b>A697 East of Lauder Bend 1</b>		Designed	2022/06/02	File No. 200522 Dunside Tracking – CN.dwg													
						Checked	2022/06/02	Drawing Status <b>Draft</b>													
Key <table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="width: 20px; height: 10px; background-color: red;"></td> <td style="width: 20px; height: 10px; background-color: green;"></td> <td style="width: 20px; height: 10px; background-color: magenta;"></td> <td style="width: 20px; height: 10px; background-color: cyan;"></td> <td style="width: 20px; height: 10px; background: repeating-linear-gradient(45deg, transparent, transparent 2px, red 2px, red 4px);"></td> <td style="width: 20px; height: 10px; background: repeating-linear-gradient(-45deg, transparent, transparent 2px, blue 2px, blue 4px);"></td> </tr> <tr> <td>Wheel SPA</td> <td>Body SPA</td> <td>Load SPA</td> <td>Indicative</td> <td>Over-run</td> <td>Over-sail</td> </tr> </table>								Wheel SPA	Body SPA	Load SPA	Indicative	Over-run	Over-sail	Point of Interest 32		Drawing No. <b>SK13</b>		Notes: 1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only.		Revision 1	
Wheel SPA	Body SPA	Load SPA	Indicative	Over-run	Over-sail																



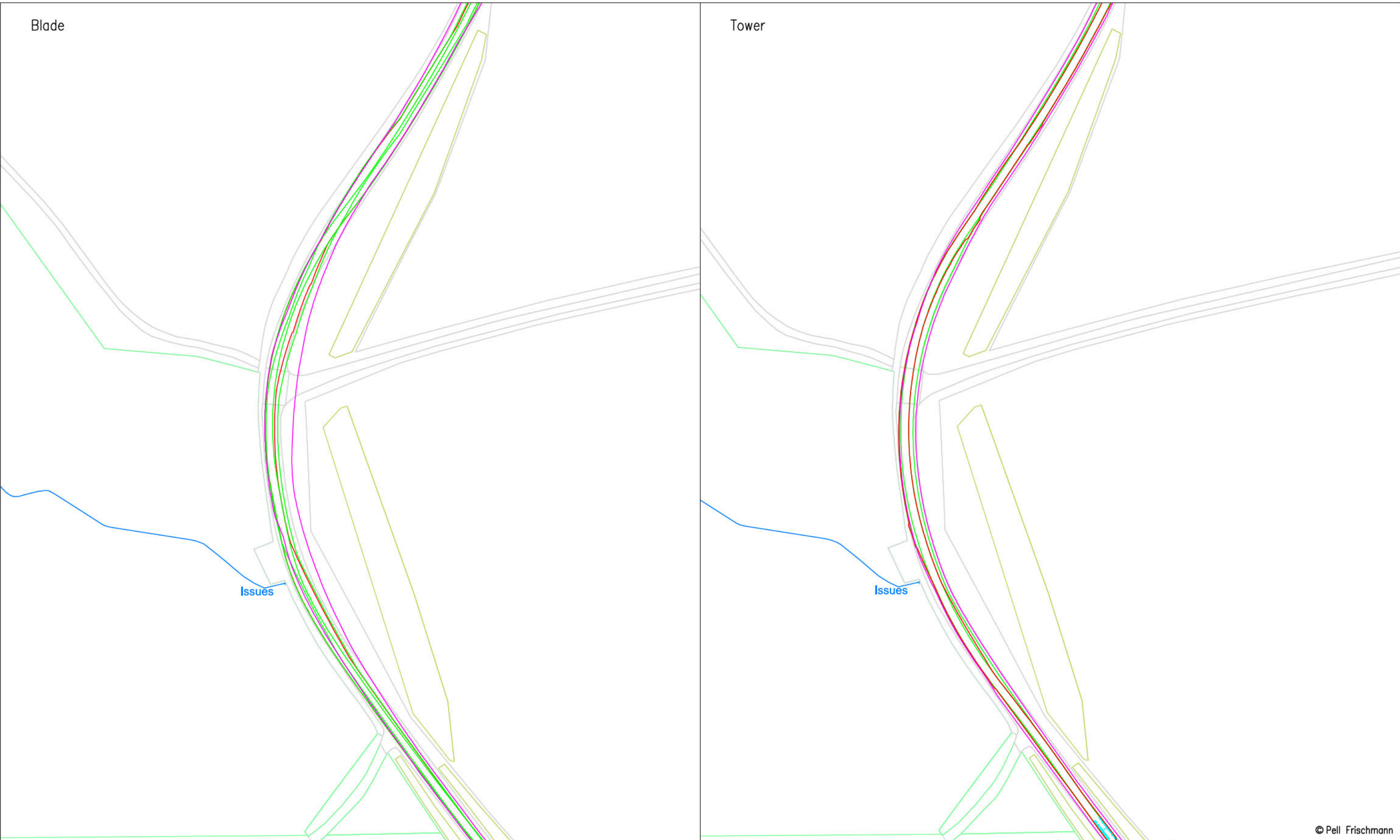


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						Dunside Wind Farm			1:1500 @ A3	
Client						Drawing Title			File No.	
						Siemens SG170 Blade and Tower			200522 Dunside Tracking - CN.dwg	
Client						SPA Location			Drawing Status	
						A697 East of Lauder Bend 1			Draft	
Key						Point of Interest		Revision		
						32		1		
Drawing No. SK13A						Notes:		1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only.		

Blade

Tower



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Project

Dunside Wind Farm

	Name	Date
Drawn	SK	02/06/2022
Designed	SK	02/06/2022
Checked	GB	02/06/2022

Scale 1:1250 @ A3

File No. 200522 Dunside Tracking - CN.dwg

Drawing Status Draft

Client

EDF

Drawing Title

Siemens SG170 Blade and Tower

Point of Interest

33

Drawing No.

SK14

Notes:

- All mitigation is subject to confirmation through a test run.
- This is not a construction drawing and is intended for illustration purposes only.

Revision

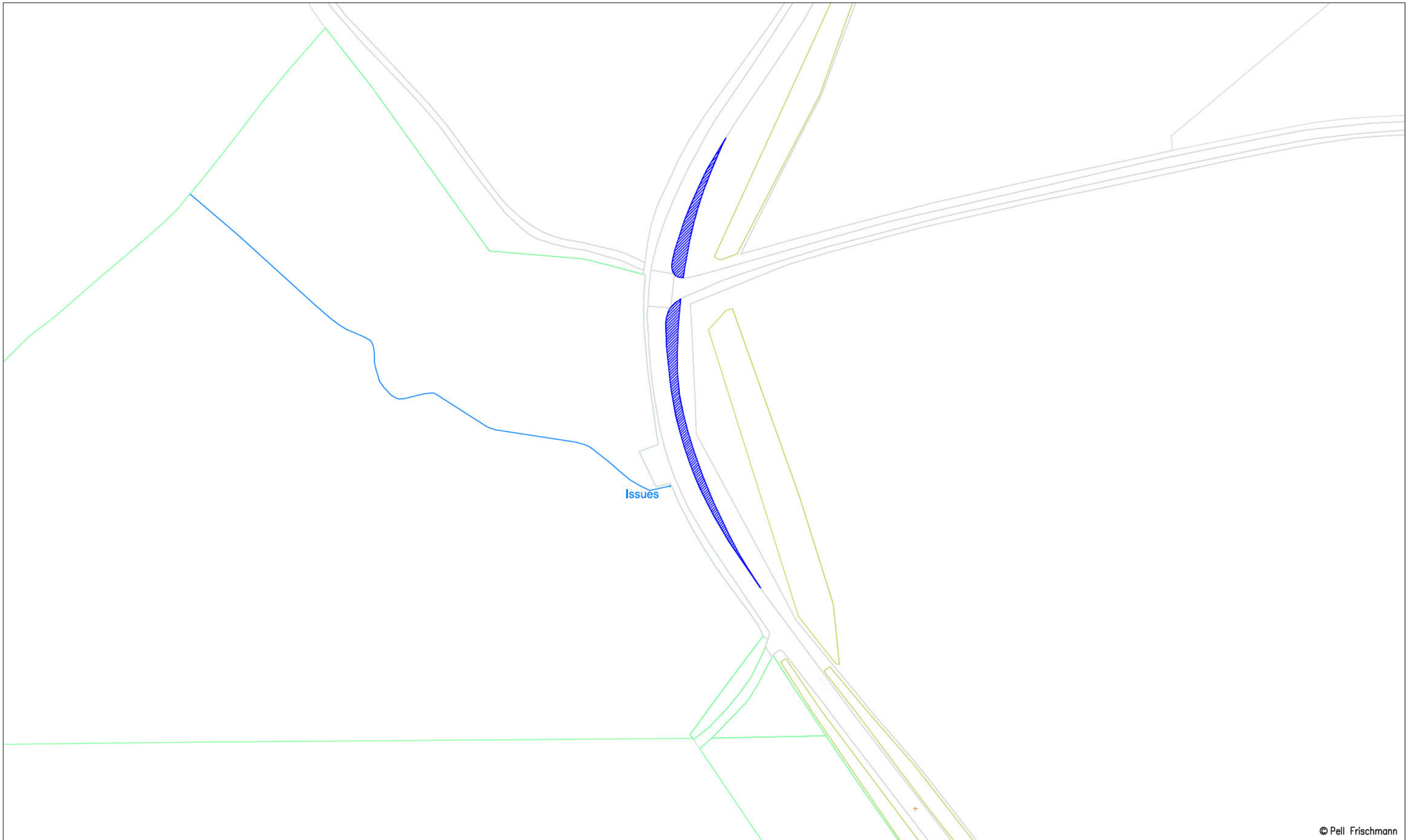
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Key

					
Wheel SPA	Body SPA	Load SPA	Indicative	Over-run	Over-sail

SPA Location

A697 East of Lauder Bend 2

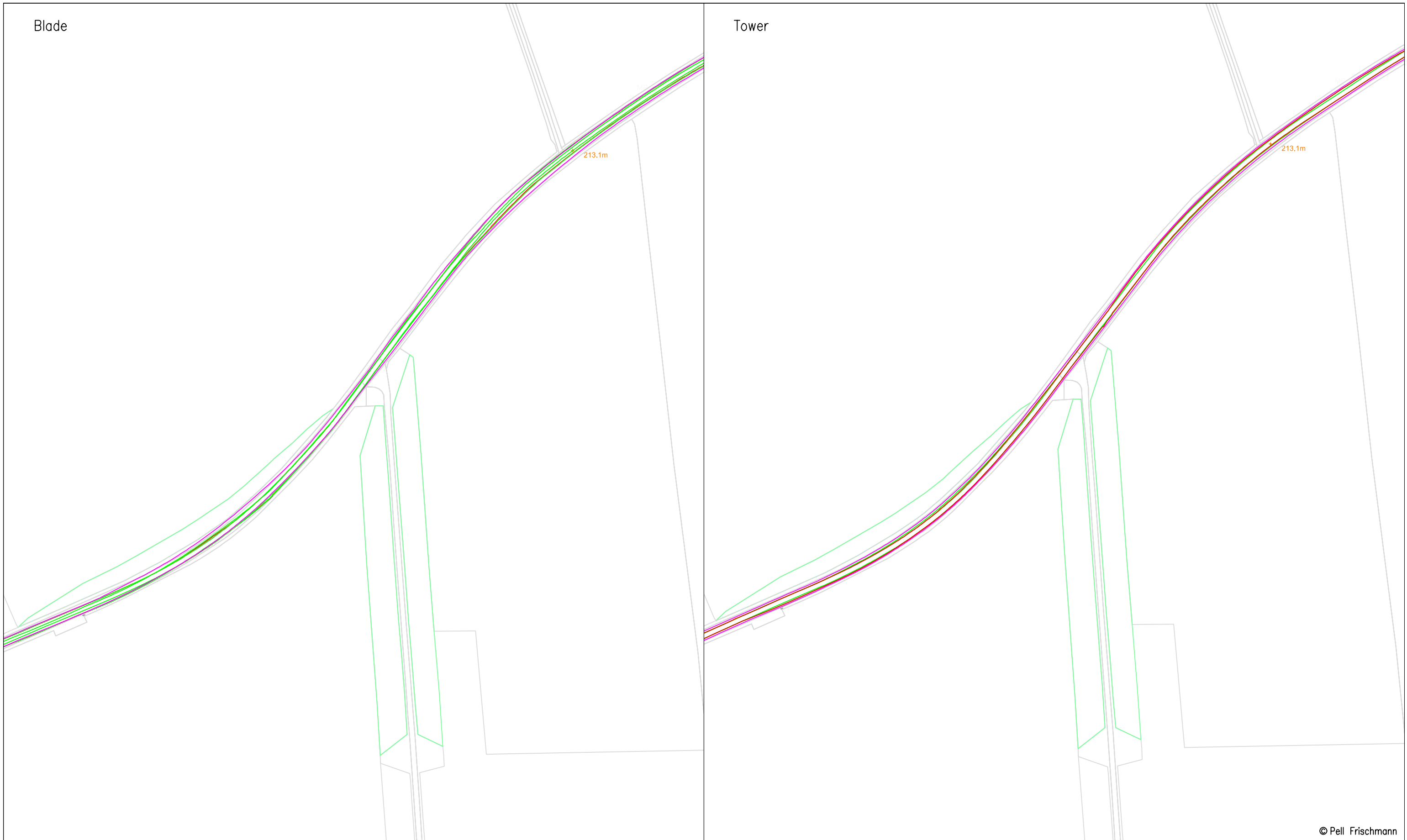


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						Dunside Wind Farm			Drawn	SK	02/06/2022	1:1250 @ A3														
Client						Drawing Title			Designed		Date	File No.														
						Siemens SG170 Blade and Tower			Checked	GB	02/06/2022	200522 Dunside Tracking - CN.dwg														
EDF Key: <table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="width: 20px; height: 10px; background-color: red;"></td> <td style="width: 20px; height: 10px; background-color: green;"></td> <td style="width: 20px; height: 10px; background-color: magenta;"></td> <td style="width: 20px; height: 10px; background-color: cyan;"></td> <td style="width: 20px; height: 10px; background-color: red; border: 1px solid black;"></td> <td style="width: 20px; height: 10px; background-color: blue; border: 1px solid black;"></td> </tr> <tr> <td>Wheel SPA</td> <td>Body SPA</td> <td>Load SPA</td> <td>Indicative</td> <td>Over-run</td> <td>Over-sail</td> </tr> </table>												Wheel SPA	Body SPA	Load SPA	Indicative	Over-run	Over-sail	SPA Location			Point of Interest		33		Drawing Status	
Wheel SPA	Body SPA	Load SPA	Indicative	Over-run	Over-sail																					
A697 East of Lauder Bend 2						Drawing No.		Notes:		Revision																
						SK14A		1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only.		1																

Blade

Tower



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Project

Dunside Wind Farm

	Name	Date
Drawn	SK	02/06/2022
Designed	SK	02/06/2022
Checked	GB	02/06/2022

Scale 1:1000 @ A3

File No. 200522 Dunside Tracking – CN.dwg

Drawing Status Draft

Client EDF

Drawing Title

Siemens SG170 Blade and Tower

Point of Interest 36

Key	Wheel SPA	Body SPA	Load SPA	Indicative	Over-run	Over-sail

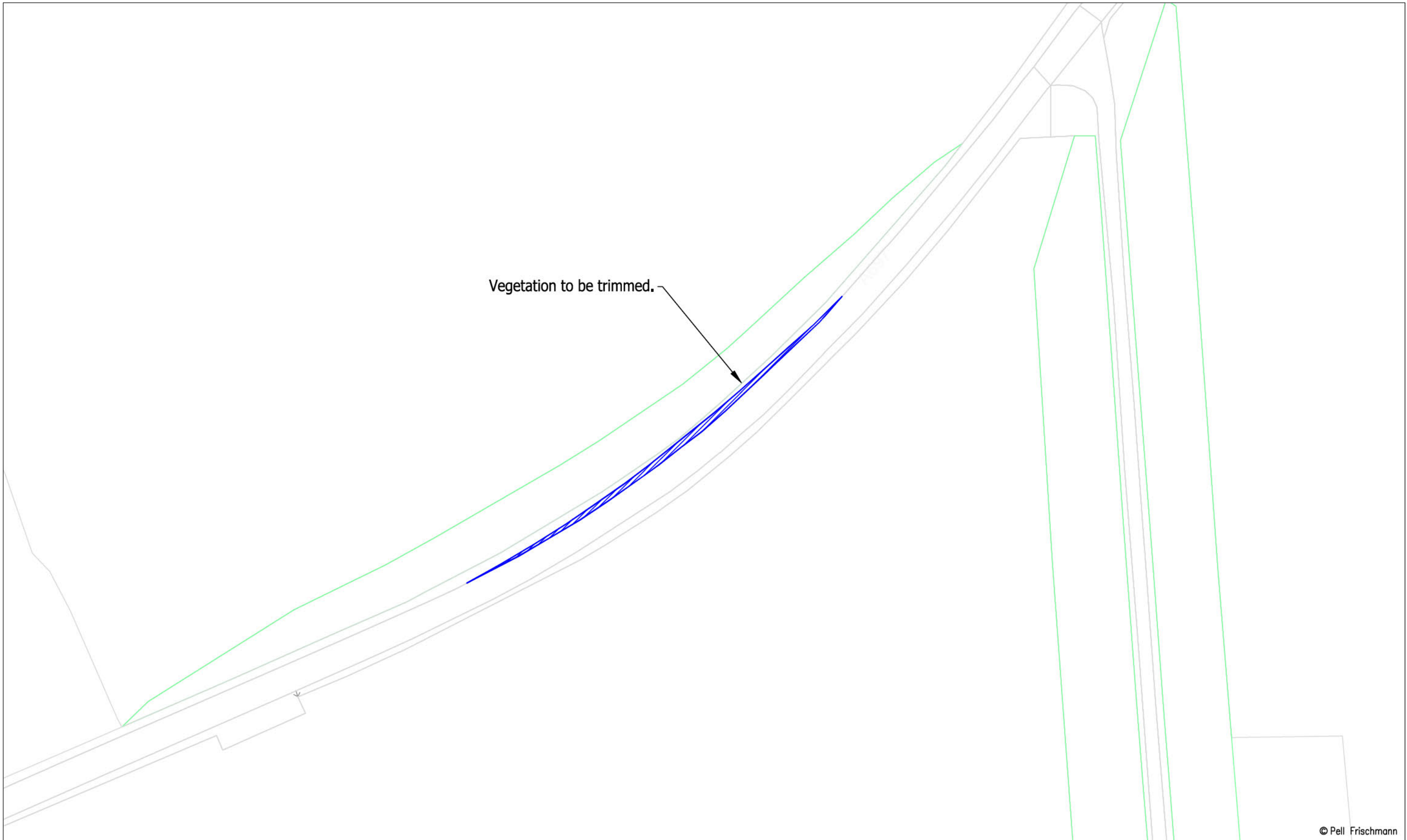
SPA Location

A697 South-West of Thirlestane

Drawing No. SK15

Notes:  
1. All mitigation is subject to confirmation through a test run.  
2. This is not a construction drawing and is intended for illustration purposes only.

Revision 1



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		Client		Drawing Title		Point of Interest		Drawing No.		Revision	
EDF		Siemens SG170 Blade and Tower		36		SK		08/06/2023		1:2000 @ A3	
SPA Location		A697 South-West of Thirlestane		SK15A		SK		09/08/2023		File No. 200522 Dunside Tracking - CN.dwg	
Key		Over-run		Over-sail		GB		03/08/2019		Drawing Status	
Wheel SPA		Body SPA		Load SPA		Indicative		Notes:		Draft	
								1. All mitigation is subject to confirmation through a test run.		1	
								2. This is not a construction drawing and is intended for illustration purposes only.			

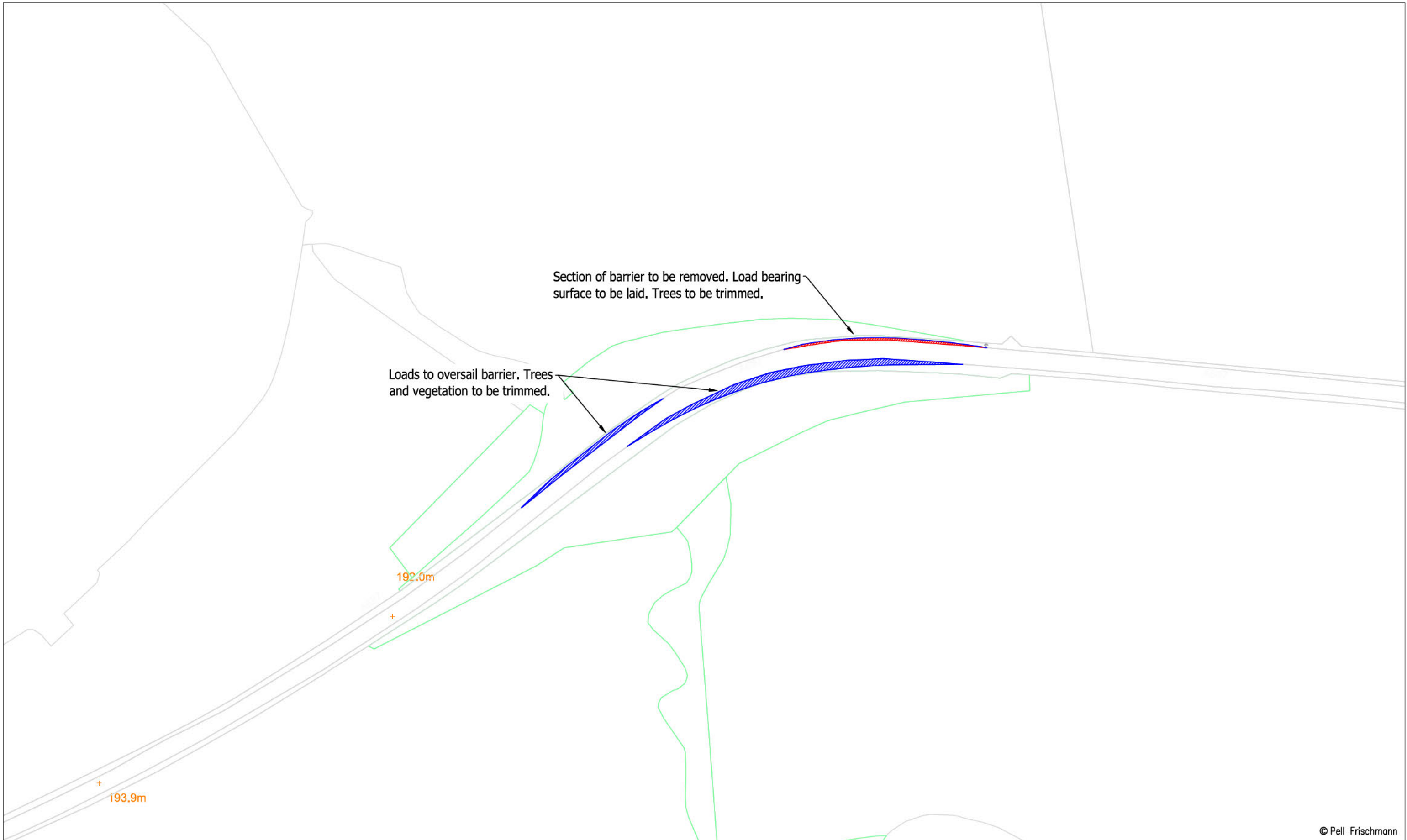
Blade

Tower



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		Client		Drawing Title		Designed	SK	02/06/2022	File No.	200522 Dunside Tracking – CN.dwg	
EDF		SPA Location		A697 Thirlestane		Checked	GB	02/06/2022	Drawing Status	Draft	
Key Wheel SPA   Body SPA   Load SPA   Indicative   Over-run   Over-sail		SPA Location		A697 Thirlestane		Point of Interest		37		Revision	
						Drawing No.	SK16		Notes:		1
								1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only.			

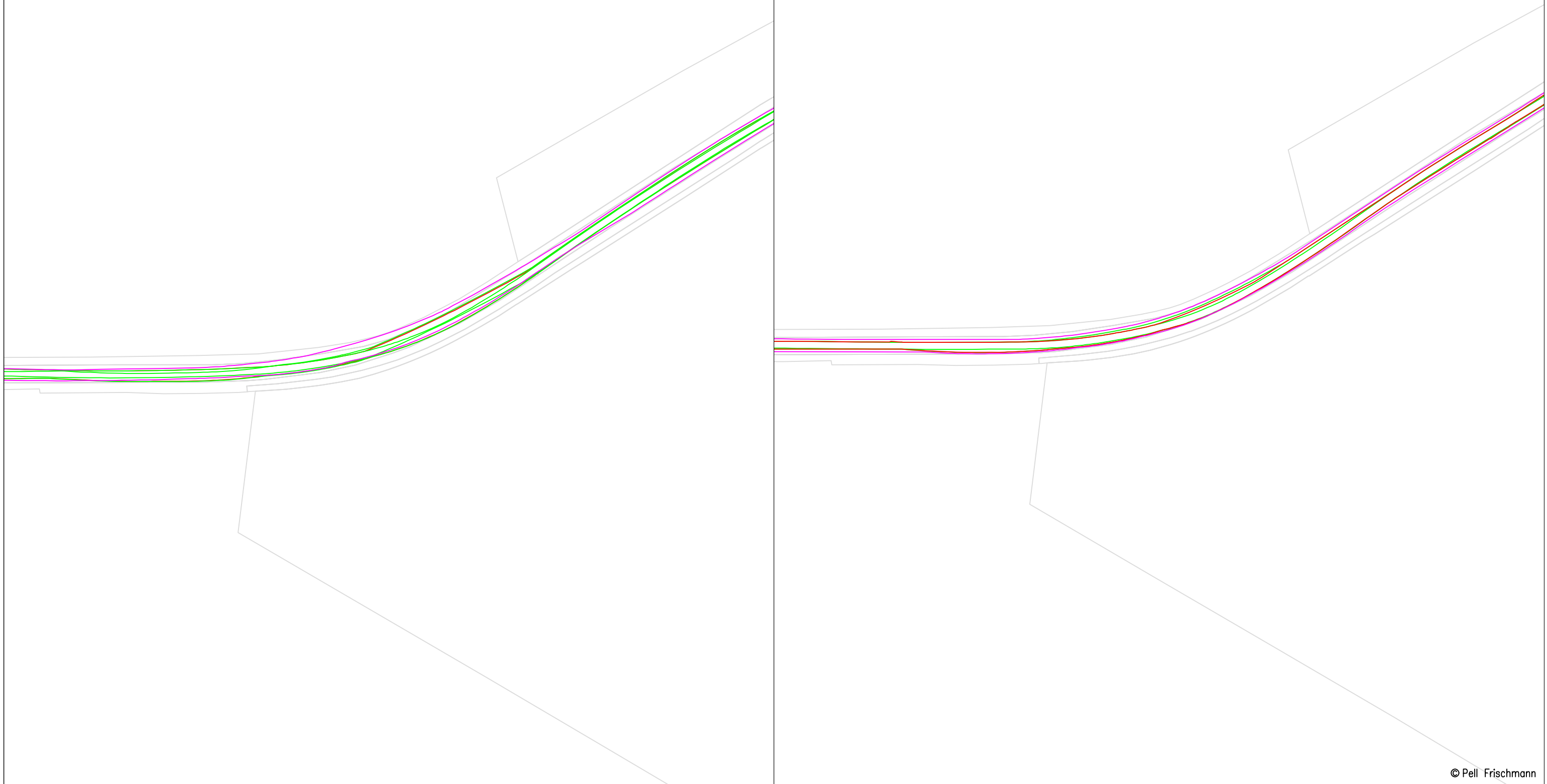


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		Client		Drawing Title		Drawn	SK	02/08/2023	File No.	200522 Dunside Tracking - CN.dwg	Drawing Status	
EDF		SPA Location		Siemens SG170 Blade and Tower		Checked	GB	03/08/2023	Point of Interest	37	Revision	
Key		A697 Thirlestane		Drawing No.		SK16A		Notes:		1		
Wheel SPA	Body SPA	Load SPA	Indicative	Over-run	Over-sail	1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only.						

Blade

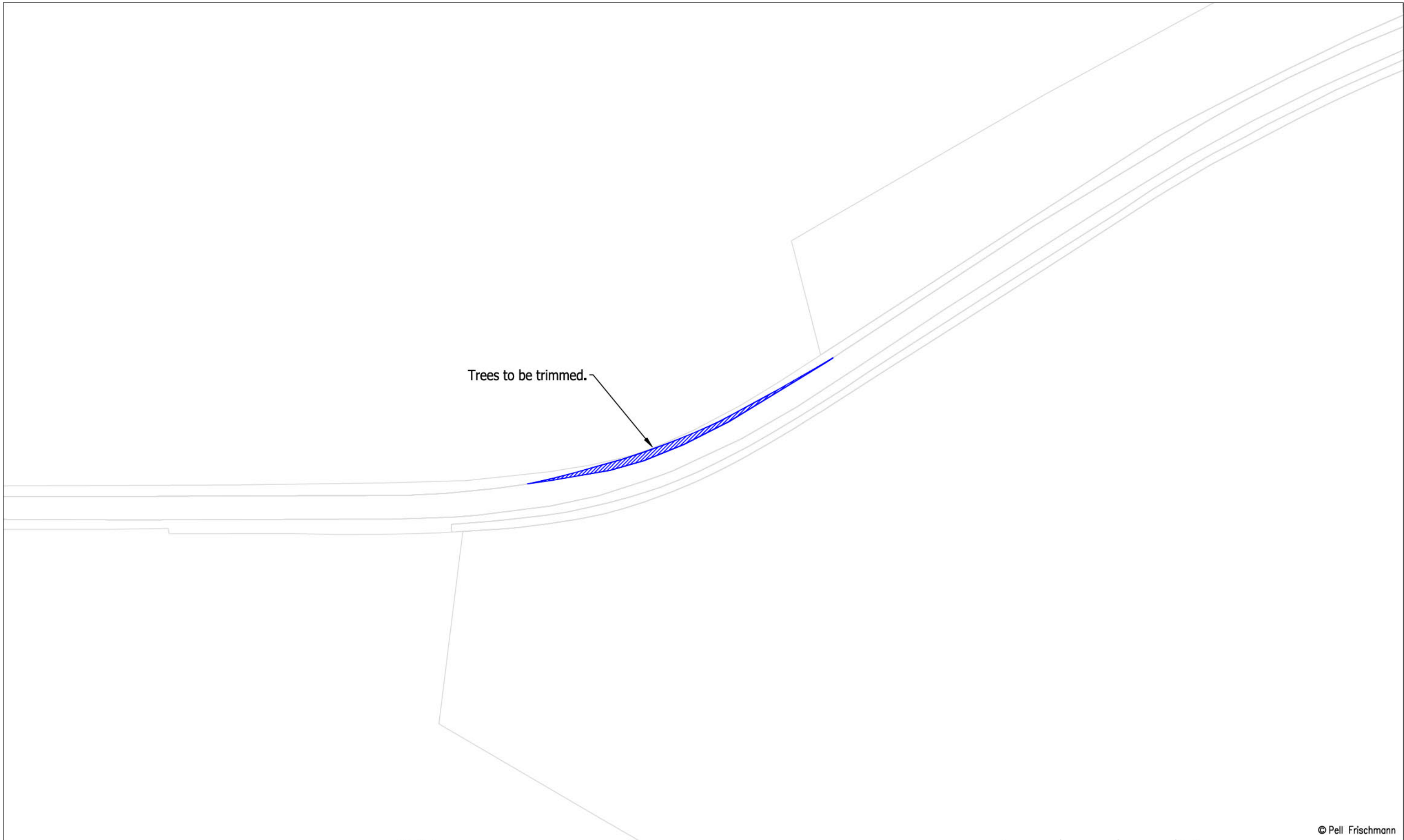
Tower



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		Client		Drawing Title		Designed	SK	02/06/2022		File No. 200522 Dunside Tracking – CN.dwg					
		EDF		Siemens SG170 Blade and Tower		Checked	GB	02/06/2022			Drawing Status Draft				
Key	Wheel SPA	Body SPA	Load SPA	Indicative	Over-run	Over-sail	SPA Location		Point of Interest	42	Drawing No.	SK17	Notes:	Revision	1
												1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only.			





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						Drawn		SK	02/06/2022		Designed		SK	02/06/2022		File No. 200522 Dunside Tracking - CN.dwg				
Client						EDF						Checked		GB	02/06/2022		Drawing Status		Draft	
						Drawing Title						Siemens SG170 Blade and Tower						Point of Interest		42
SPA Location						A697 East of Whiteburn						Drawing No.		SK17A		Notes:		1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only.		
Key	Wheel SPA	Body SPA	Load SPA	Indicative	Over-run	Over-sail														

Blade

Tower



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		Client		Drawing Title		Designed	SK	02/06/2022	File No.	200522 Dunside Tracking – CN.dwg	
EDF		SPA Location		Siemens SG170 Blade and Tower		Checked	GB	02/06/2022	Drawing Status	Draft	
Key		SPA Location		A697/B6456 Junction		Point of Interest		43		Revision	
<div style="display: flex; justify-content: space-between;"> <span>Wheel SPA</span> <span>Body SPA</span> <span>Load SPA</span> <span>Indicative</span> <span>Over-run</span> <span>Over-sail</span> </div>						Drawing No.		SK18		Notes: 1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only.	
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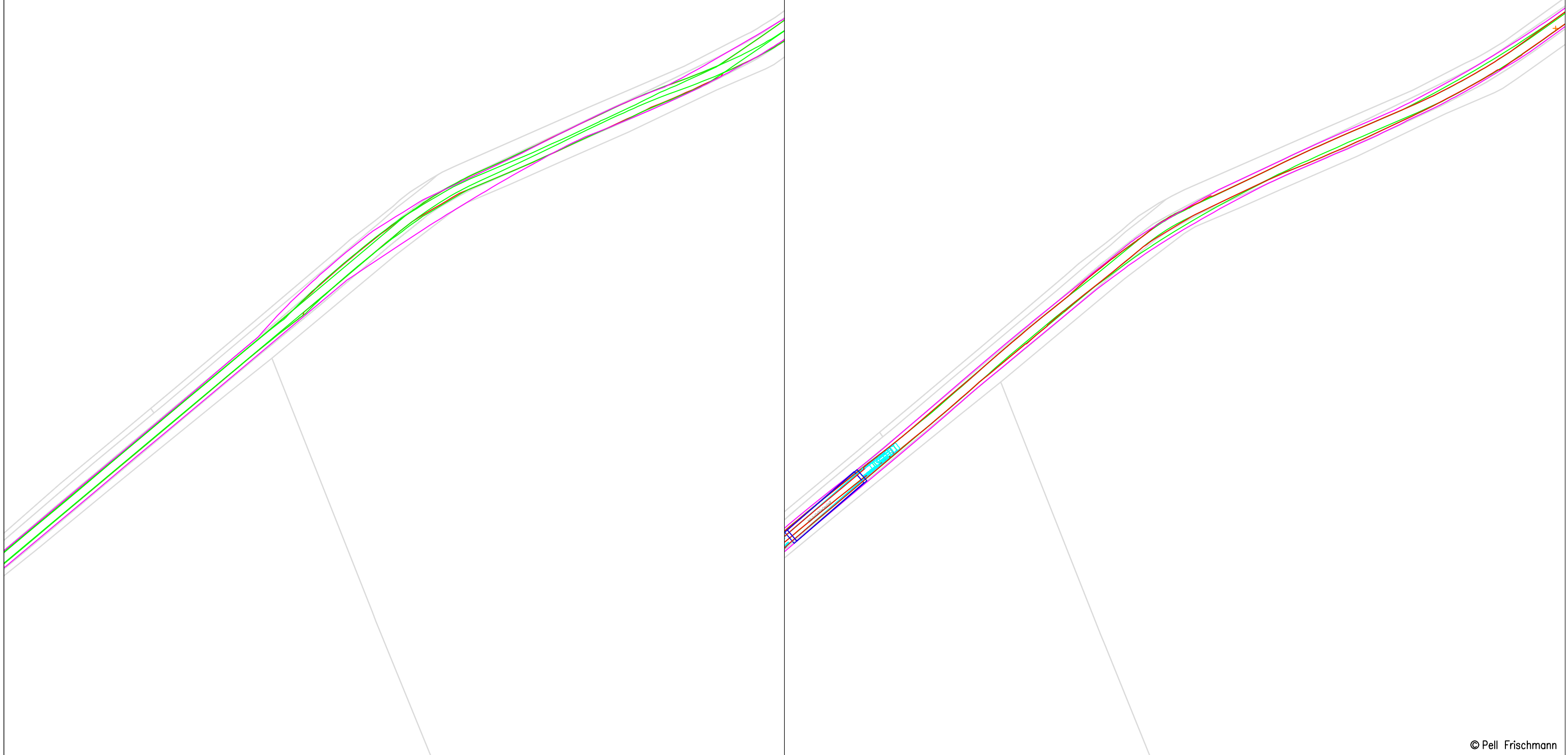


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		Client		Drawing Title		Designed	SK	02/06/2022	File No.	200522 Dunside Tracking - CN.dwg	
EDF		SPA Location		Siemens SG170 Blade and Tower		Checked	GB	02/06/2022	Drawing Status	Draft	
Key				SPA Location		Point of Interest		43		Revision	
Wheel SPA Body SPA Load SPA Indicative Over-run Over-sail		A697/B6456 Junction				Drawing No.		SK18A		Notes: 1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only.	
										1	

Blade

Tower



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Project

Dunside Wind Farm

	Name	Date
Drawn	SK	02/06/2022
Designed	SK	02/06/2022
Checked	GB	02/06/2022

Scale 1:1250 @ A3

File No. 200522 Dunside Tracking – CN.dwg

Drawing Status Draft

Client

EDF

Drawing Title

Siemens SG170 Blade and Tower

Point of Interest

44

Drawing No.

SK19


Notes:

- All mitigation is subject to confirmation through a test run.
- This is not a construction drawing and is intended for illustration purposes only.

Revision

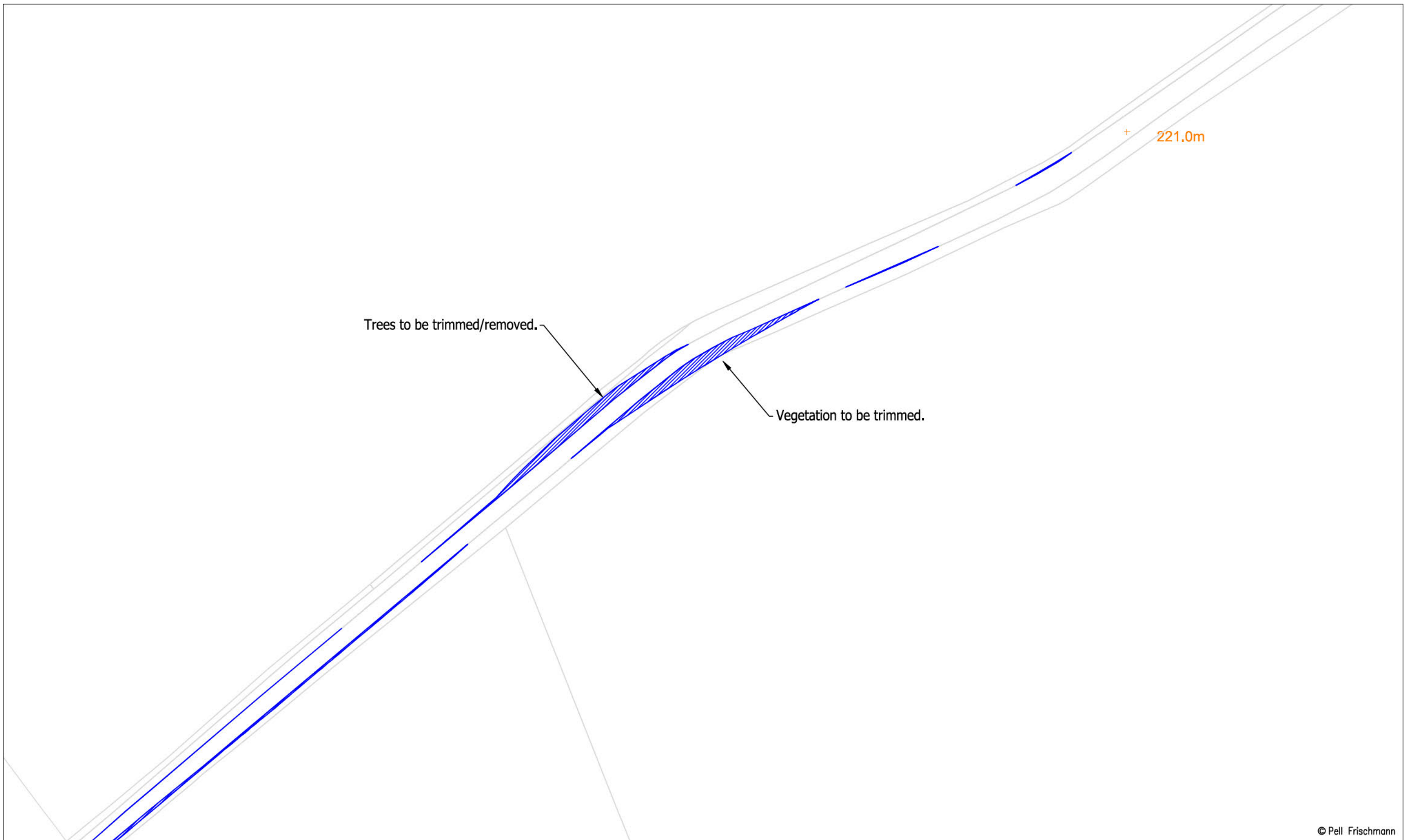
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Key

					
Wheel SPA	Body SPA	Load SPA	Indicative	Over-run	Over-sail

SPA Location

B6456 Bend 1

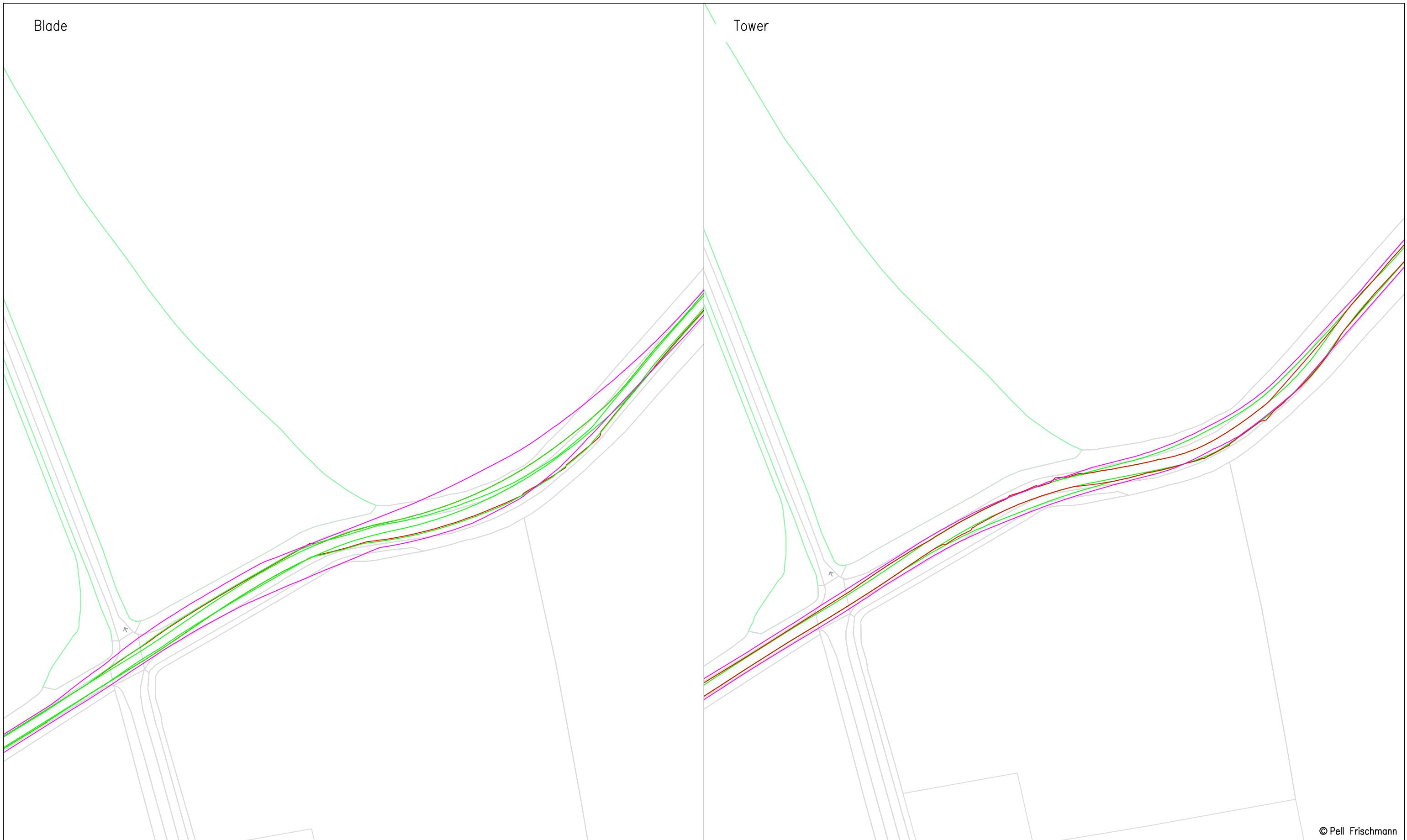


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						Dunside Wind Farm			1:1250 @ A3	
Client						Drawing Title			File No.	
						Siemens SG170 Blade and Tower			200522 Dunside Tracking - CN.dwg	
Key Wheel SPA   Body SPA   Load SPA   Indicative   Over-run   Over-sail						SPA Location			Drawing Status	
						B6456 Bend 1			Draft	
						Point of Interest		Revision		
						44		1		
						Drawing No.		Notes:		
						SK19A		1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only.		

Blade

Tower



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		Client		Drawing Title		Point of Interest		Drawing No.		Revision	
EDF		Siemens SG170 Blade and Tower		45		SK20		Notes: 1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only.		1	
SPA Location		B6456 Bend 2									
Key	Wheel SPA	Body SPA	Load SPA	Indicative	Over-run	Over-sail					



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						Dunside Wind Farm			SK		02/06/2022		1:1250 @ A3	
Client						Drawing Title			Point of Interest		Drawing Status			
						Siemens SG170 Blade and Tower			45		Draft			
Key Wheel SPA   Body SPA   Load SPA   Indicative   Over-run   Over-sail						SPA Location			Drawing No.		Notes:		Revision	
						B6456 Bend 2			SK20A		1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only.		1	

Blade

Tower



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Project

Dunside Wind Farm

	Name	Date
Drawn	SK	02/06/2022
Designed	SK	02/06/2022
Checked	GB	02/06/2022

Scale 1:1500 @ A3

File No. 200522 Dunside Tracking – CN.dwg

Drawing Status Draft

Client EDF

Drawing Title

Siemens SG170 Blade and Tower

Point of Interest 46

Drawing No. SK21

Notes:  
 1. All mitigation is subject to confirmation through a test run.  
 2. This is not a construction drawing and is intended for illustration purposes only.

Revision 1

Key	Wheel SPA	Body SPA	Load SPA	Indicative	Over-run	Over-sail

SPA Location

B6456 Bend 3





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		Client		Drawing Title		Point of Interest		Drawing No.		Revision	
EDF		Siemens SG170 Blade and Tower		46		SK		02/06/2022		1:1500 @ A3	
Key		SPA Location		B6456 Bend 3		SK		02/06/2022		File No. 200522 Dunside Tracking - CN.dwg	
Wheel SPA						GB		02/06/2022		Drawing Status	
Body SPA										Draft	
Load SPA											
Indicative											
Over-run											
Over-sail											
						Notes:					
						1. All mitigation is subject to confirmation through a test run.					
						2. This is not a construction drawing and is intended for illustration purposes only.					

Blade

215.8m

Tower

215.8m

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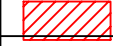
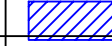
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Project

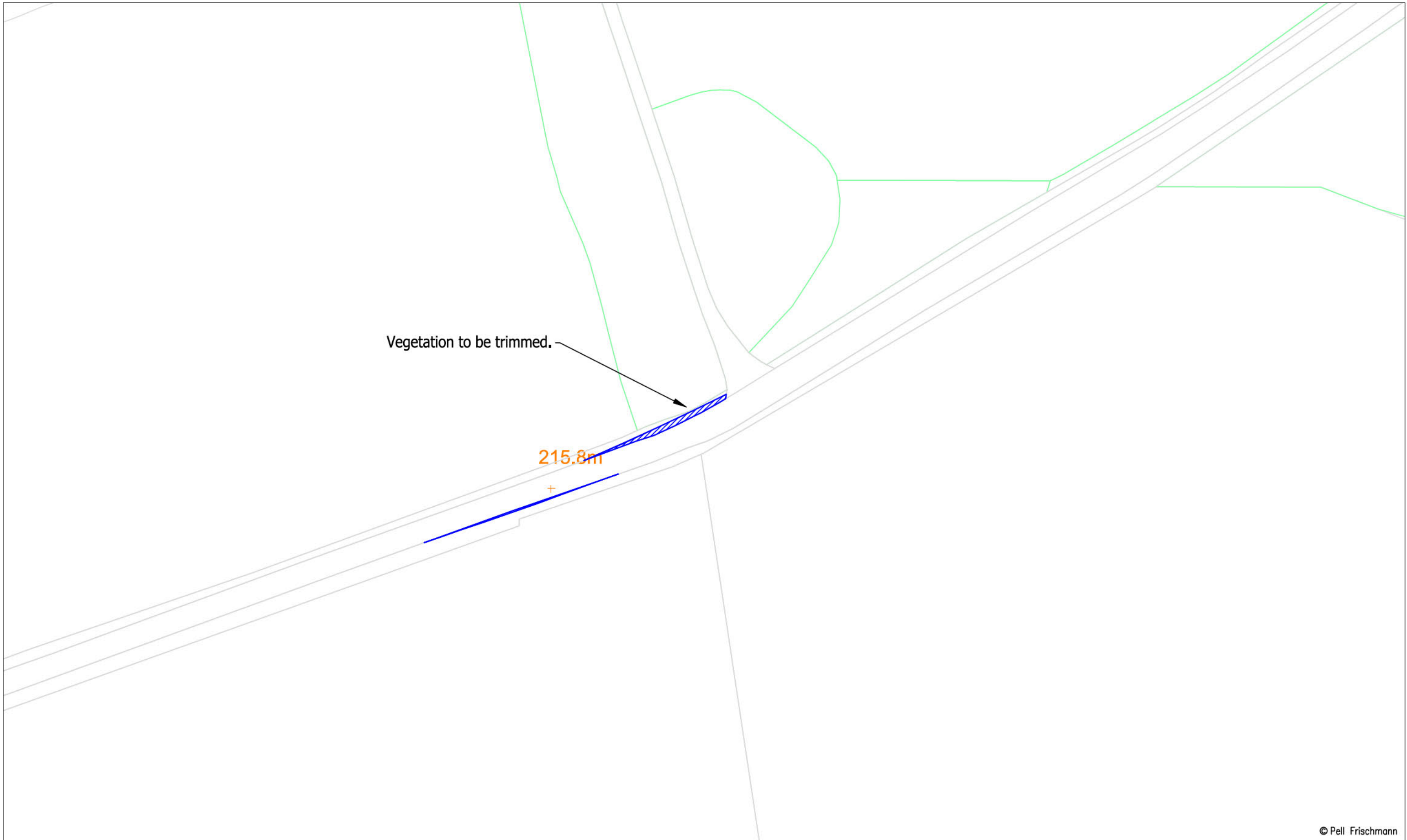
Dunside Wind Farm

Drawn	SK	02/06/2023	Scale	1:500 @ A3
Designed	SK	09/08/2023	File No.	200522 Dunside Tracking - CN.dwg
Checked	GB	03/08/2023	Drawing Status	Draft
Point of Interest		47		

Client	EDF					
Key						
	Wheel SPA	Body SPA	Load SPA	Indicative	Over-run	Over-sail

Drawing Title	Siemens SG170 Blade and Tower	
SPA Location	B6456 Bend 4	

Drawing No.	SK22	Notes:	Revision
		1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only.	1



Vegetation to be trimmed.

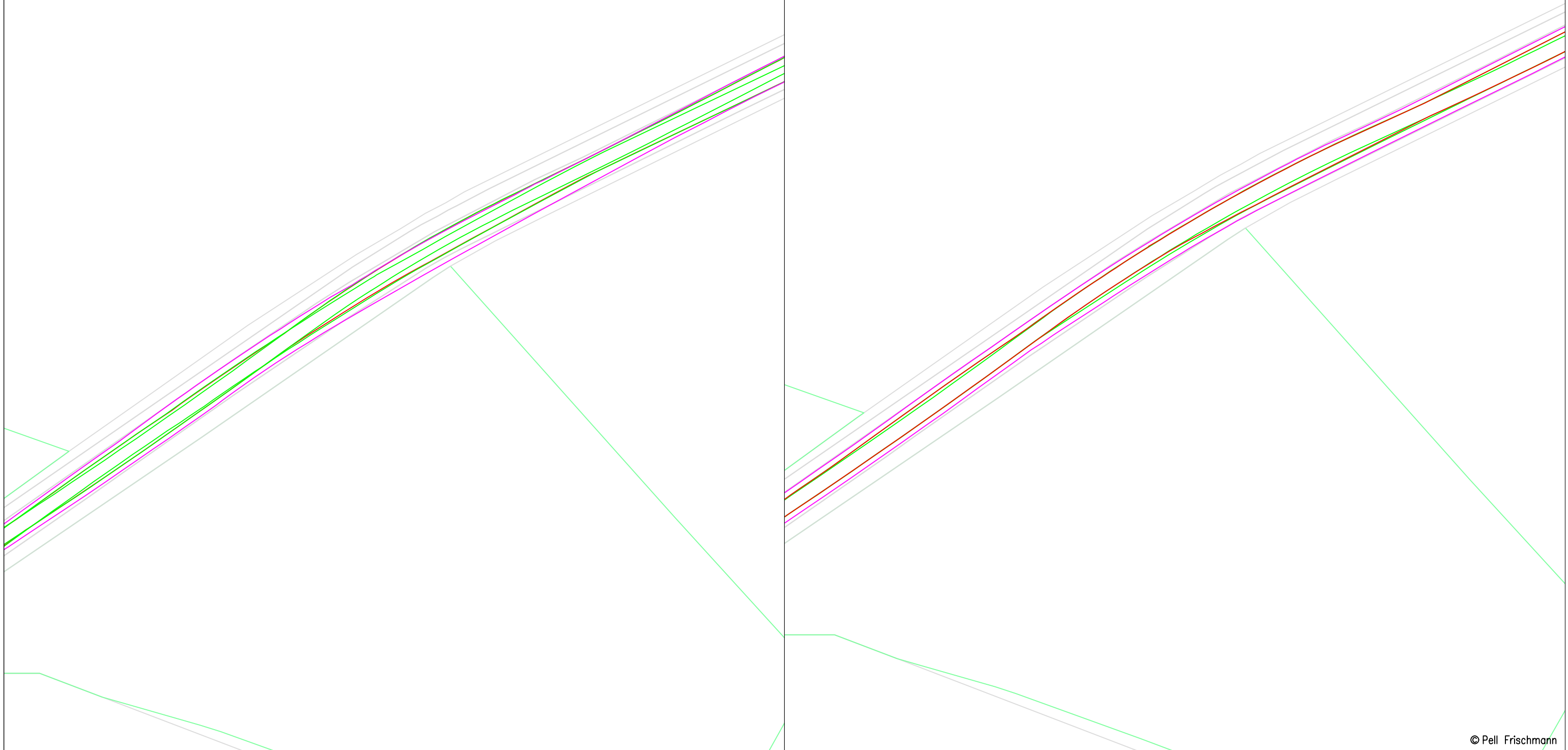
215.8m

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						Dunside Wind Farm			1:500 @ A3																					
Client						Drawing Title			File No.																					
						Siemens SG170 Blade and Tower			200522 Dunside Tracking - CN.dwg																					
Key						SPA Location			Drawing Status																					
						B6456 Bend 4			Draft																					
<table border="1"> <tr> <td>Wheel SPA</td> <td>Body SPA</td> <td>Load SPA</td> <td>Indicative</td> <td>Over-run</td> <td>Over-sail</td> </tr> </table>						Wheel SPA	Body SPA	Load SPA	Indicative	Over-run	Over-sail	<table border="1"> <tr> <td>Drawn</td> <td>SK</td> <td>08/06/2023</td> </tr> <tr> <td>Designed</td> <td>SK</td> <td>09/08/2023</td> </tr> <tr> <td>Checked</td> <td>GB</td> <td>03/08/2023</td> </tr> </table>		Drawn	SK	08/06/2023	Designed	SK	09/08/2023	Checked	GB	03/08/2023	<table border="1"> <tr> <td>Point of Interest</td> <td>47</td> </tr> </table>		Point of Interest	47	<table border="1"> <tr> <td>Revision</td> <td>1</td> </tr> </table>		Revision	1
Wheel SPA	Body SPA	Load SPA	Indicative	Over-run	Over-sail																									
Drawn	SK	08/06/2023																												
Designed	SK	09/08/2023																												
Checked	GB	03/08/2023																												
Point of Interest	47																													
Revision	1																													
						Drawing No. SK22A		Notes: 1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only.																						

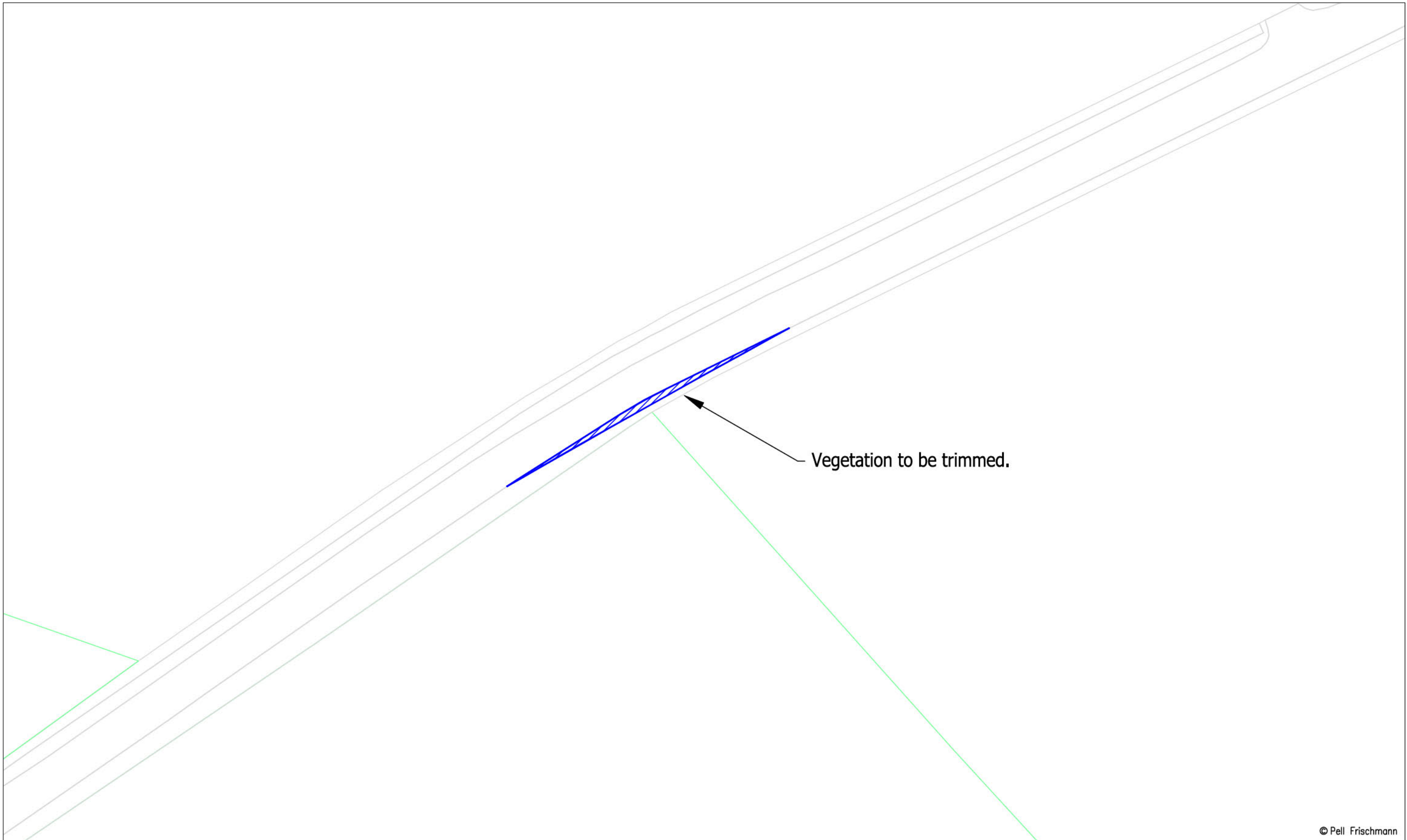
Blade

Tower



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		Client		Drawing Title		Point of Interest		Drawing No.		Revision	
EDF		Siemens SG170 Blade and Tower		48		SK23		Notes: 1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only.		1	
SPA Location		B6456 Bend 5									
Key	Wheel SPA	Body SPA	Load SPA	Indicative	Over-run	Over-sail					



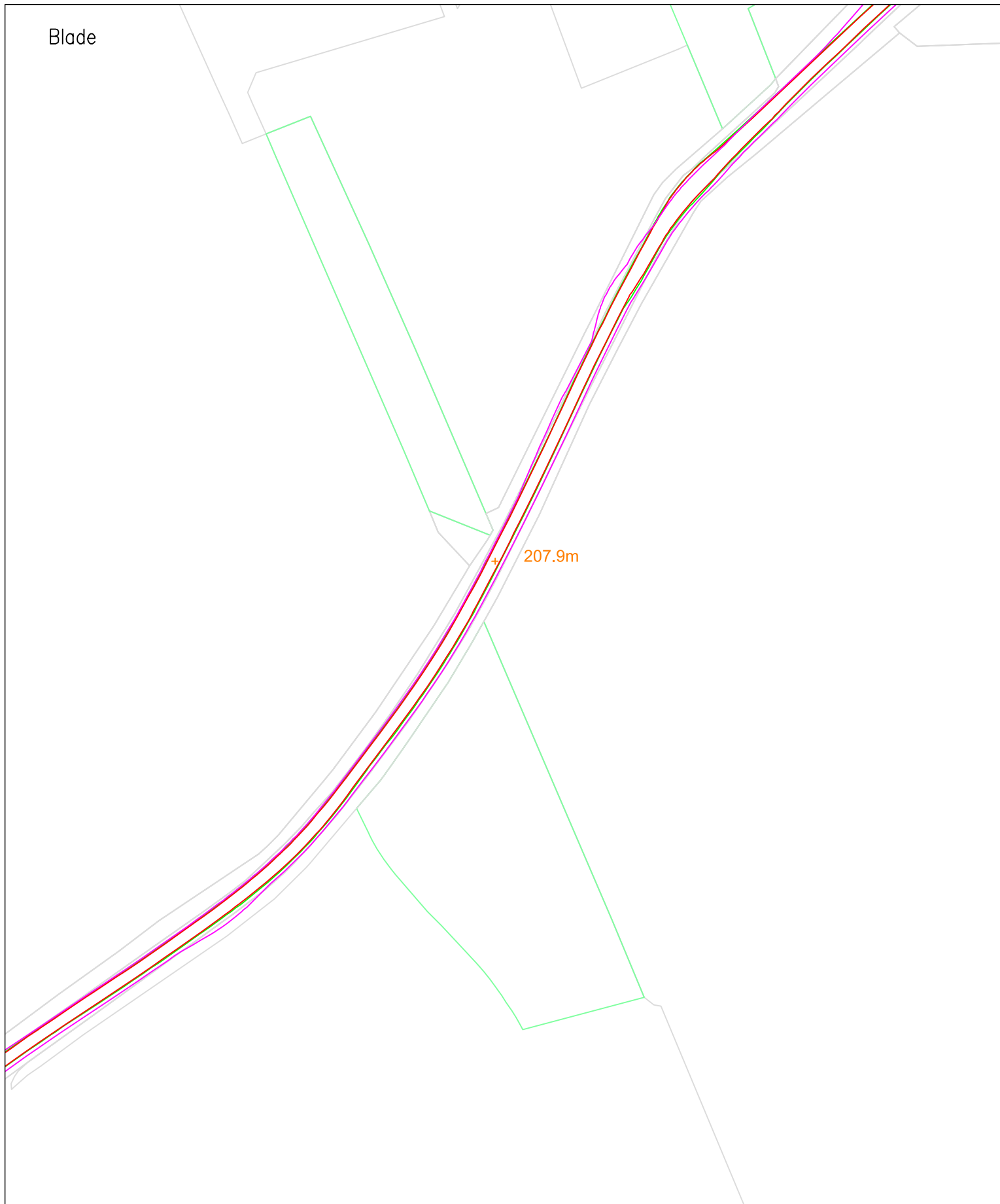
Vegetation to be trimmed.

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<b>Pell Frischmann</b> 93 GEORGE STREET, EDINBURGH, EH2 3ES Tel: +44 (0)131 240 1270 Email: pfe@pellfrischmann.com www.pellfrischmann.com						Project			Scale	
						Dunside Wind Farm			1:1250 @ A3	
Client						Drawing Title			File No.	
						Siemens SG170 Blade and Tower			200522 Dunside Tracking - CN.dwg	
Key Wheel SPA   Body SPA   Load SPA   Indicative   Over-run   Over-sail						SPA Location			Drawing Status	
						B6456 Bend 5			Draft	
						Point of Interest		Revision		
						48		1		
						Drawing No.		Notes:		
						SK23A		1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only.		

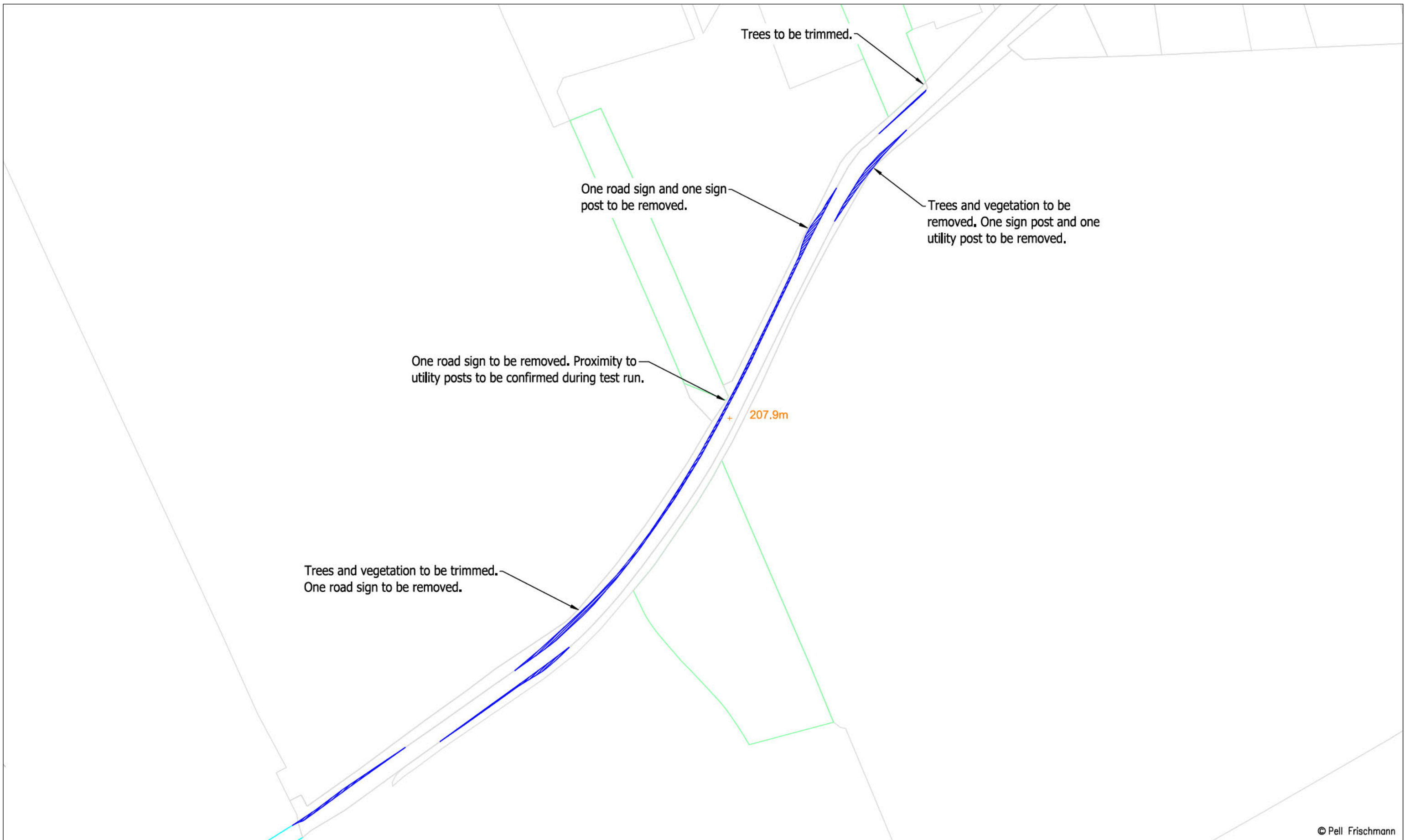
Blade

Tower



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		Client		Drawing Title		Designed	SK	09/08/2023	File No.	200522 Dunside Tracking – CN.dwg																	
EDF		SPA Location		Siemens SG170 Blade and Tower		Checked	GB	03/08/2019	Drawing Status	Draft																	
<table border="1"> <tr> <th>Key</th> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>Wheel SPA</td> <td>Body SPA</td> <td>Load SPA</td> <td>Indicative</td> <td>Over-run</td> <td>Over-sail</td> </tr> </table>		Key								Wheel SPA	Body SPA	Load SPA	Indicative	Over-run	Over-sail	SPA Location		B6456 South-West of Westruther Bends		Point of Interest	50, 51, 52		Drawing No.	SK24	Notes:	Revision	1
Key																											
	Wheel SPA	Body SPA	Load SPA	Indicative	Over-run	Over-sail																					
1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only.																											

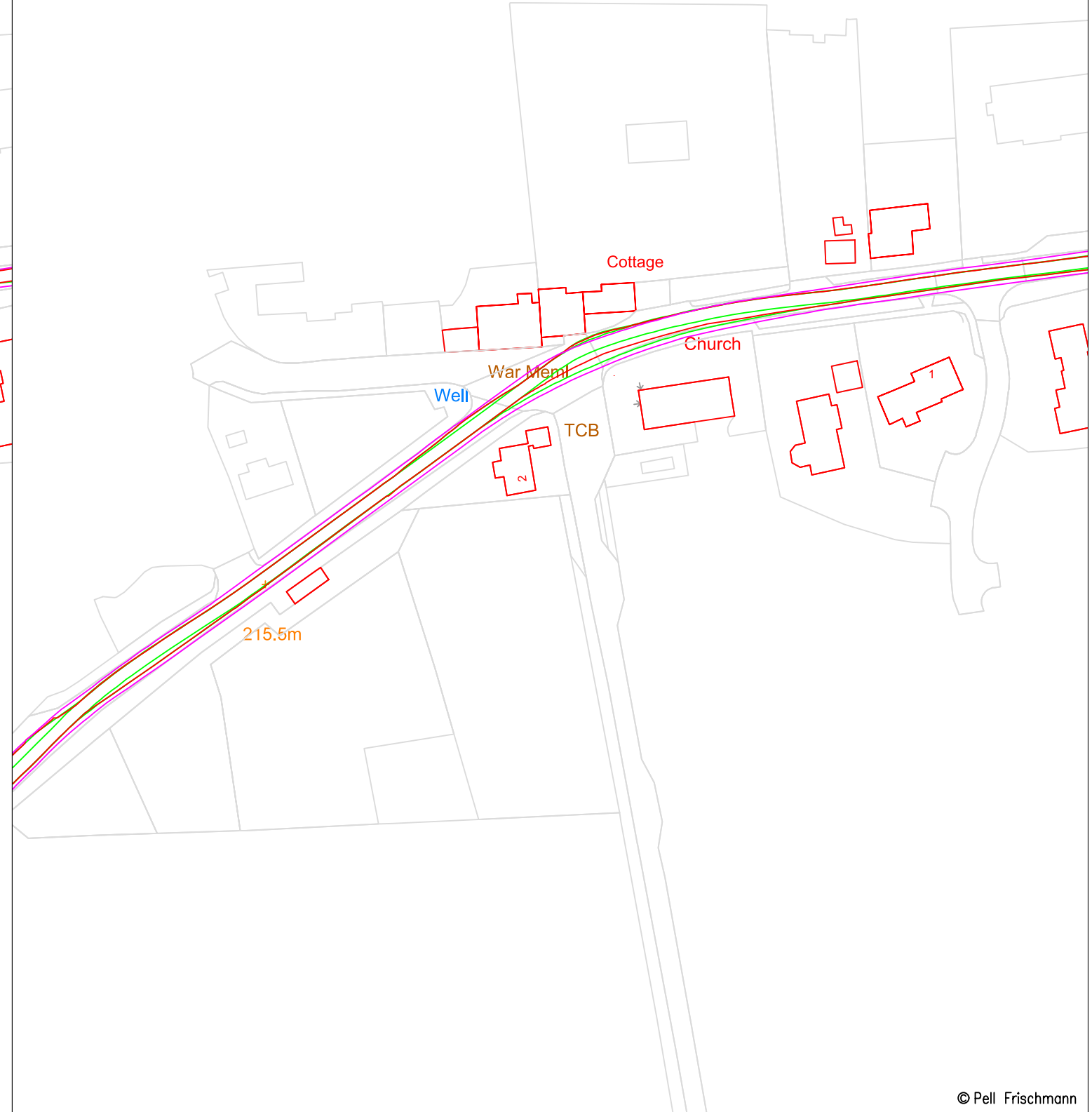
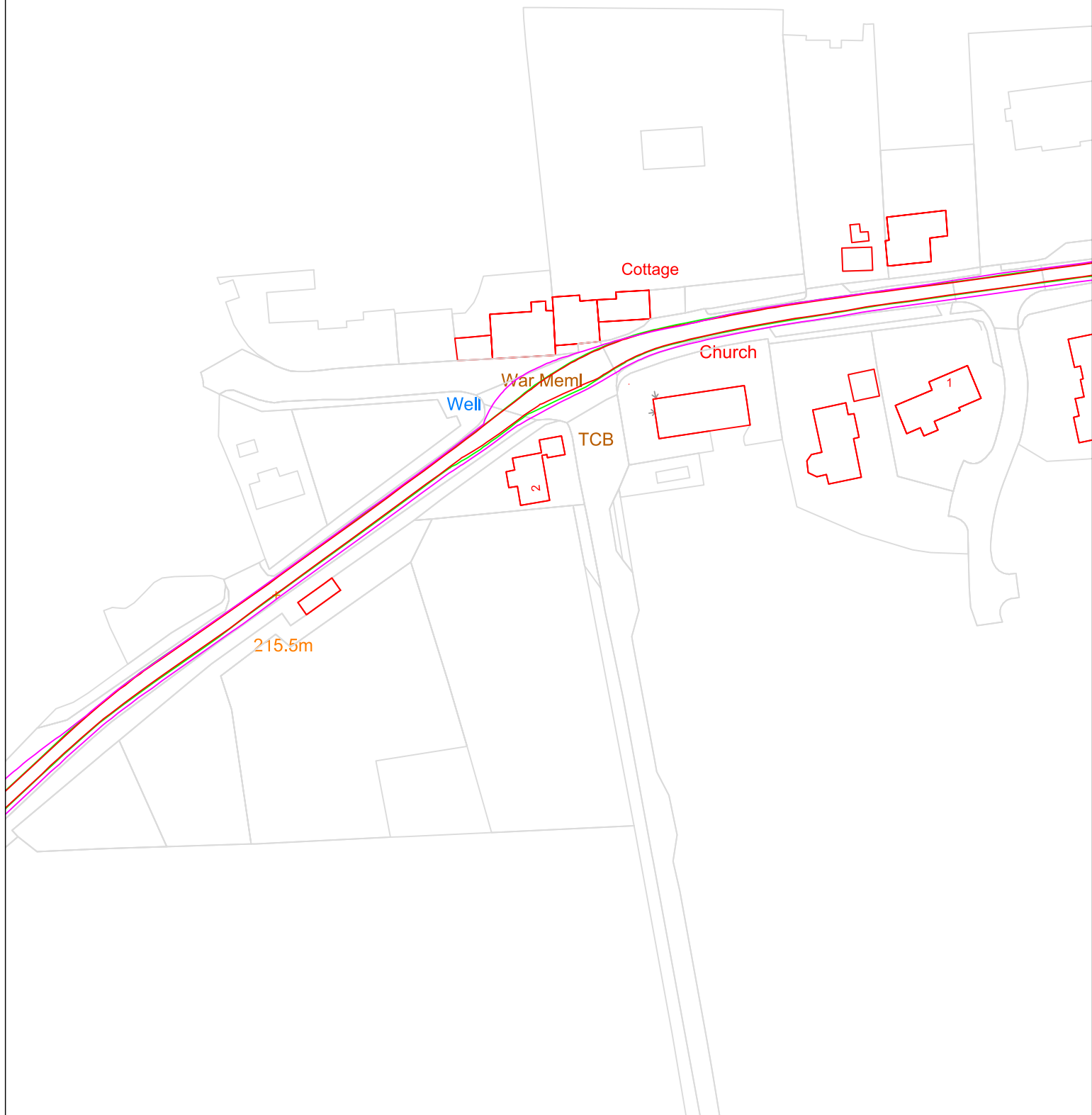


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		Client		Drawing Title		Point of Interest		Drawing No.		Revision	
EDF		Siemens SG170 Blade and Tower		50, 51, 52		SK		08/06/2023		1:500 @ A3	
Key		SPA Location		B6456 South-West of Westruther Bends		SK		09/08/2023		File No. 200522 Dunside Tracking - CN.dwg	
Wheel SPA						GB		03/08/2019		Drawing Status	
Body SPA										Draft	
Load SPA											
Indicative											
Over-run											
Over-sail											
						Notes:					
						1. All mitigation is subject to confirmation through a test run.					
						2. This is not a construction drawing and is intended for illustration purposes only.					
										1	

Blade

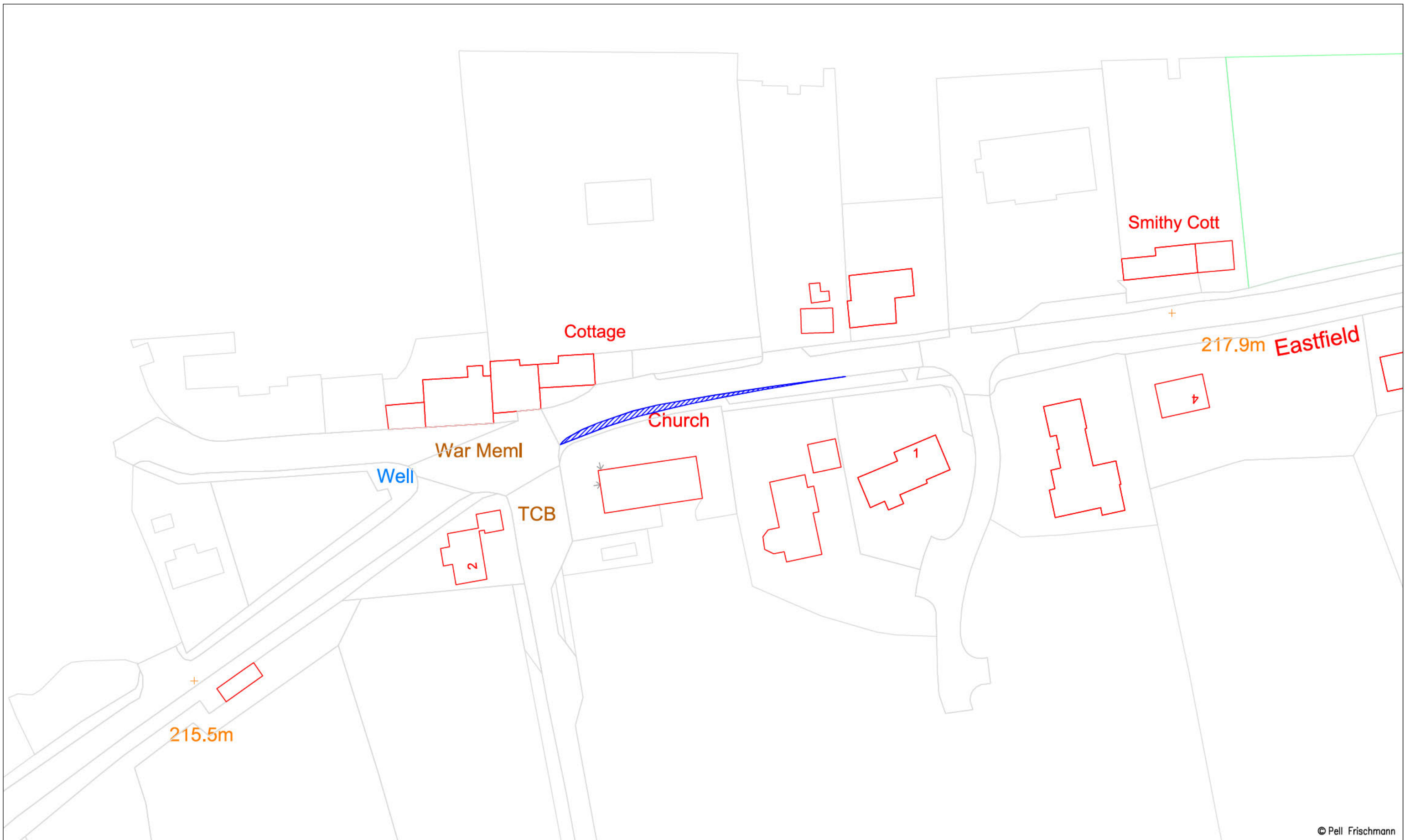
Tower



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		Client		Drawing Title		Designed	SK	02/06/2022	File No.	200522 Dunside Tracking – CN.dwg															
EDF		SPA Location		Siemens SG170 Blade and Tower		Checked	GB	02/06/2022	Drawing Status	Draft															
<table border="1"> <tr> <th>Key</th> <td><span style="color:red">—</span></td> <td><span style="color:green">—</span></td> <td><span style="color:magenta">—</span></td> <td><span style="color:cyan">—</span></td> <td><span style="border: 1px solid red; display: inline-block; width: 10px; height: 10px;"></span></td> <td><span style="border: 1px solid blue; display: inline-block; width: 10px; height: 10px;"></span></td> </tr> <tr> <td></td> <td>Wheel SPA</td> <td>Body SPA</td> <td>Load SPA</td> <td>Indicative</td> <td>Over-run</td> <td>Over-sail</td> </tr> </table>		Key	<span style="color:red">—</span>	<span style="color:green">—</span>	<span style="color:magenta">—</span>	<span style="color:cyan">—</span>	<span style="border: 1px solid red; display: inline-block; width: 10px; height: 10px;"></span>	<span style="border: 1px solid blue; display: inline-block; width: 10px; height: 10px;"></span>		Wheel SPA	Body SPA	Load SPA	Indicative	Over-run	Over-sail	SPA Location		B6456 Westruther		Point of Interest	53		Drawing No.	SK25	
Key	<span style="color:red">—</span>	<span style="color:green">—</span>	<span style="color:magenta">—</span>	<span style="color:cyan">—</span>	<span style="border: 1px solid red; display: inline-block; width: 10px; height: 10px;"></span>	<span style="border: 1px solid blue; display: inline-block; width: 10px; height: 10px;"></span>																			
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						Notes:		Revision		1															
						1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only.																			





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Client: EDF

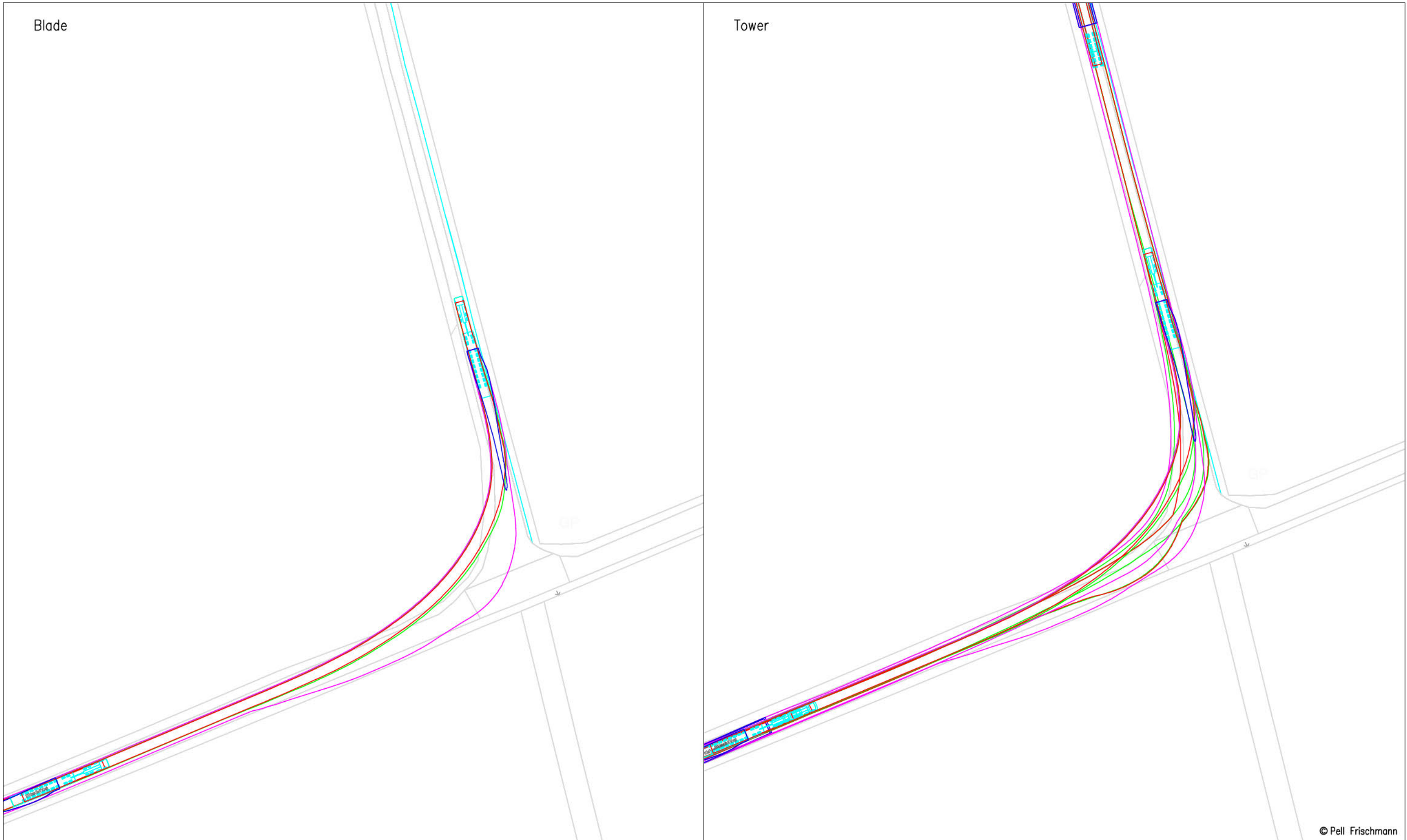
Key						
	Wheel SPA	Body SPA	Load SPA	Indicative	Over-run	Over-sail

Project	Dunside Wind Farm
Drawing Title	Siemens SG170 Blade and Tower
SPA Location	B6456 Westruther

Drawn	SK	02/06/2022	Scale	1:500 @ A3
Designed	SK	02/06/2022	File No.	200522 Dunside Tracking - CN.dwg
Checked	GB	02/06/2022	Drawing Status	Draft
Point of Interest	53		Drawing No.	SK25A
Notes:				Revision
1. All mitigation is subject to confirmation through a test run.				1
2. This is not a construction drawing and is intended for illustration purposes only.				

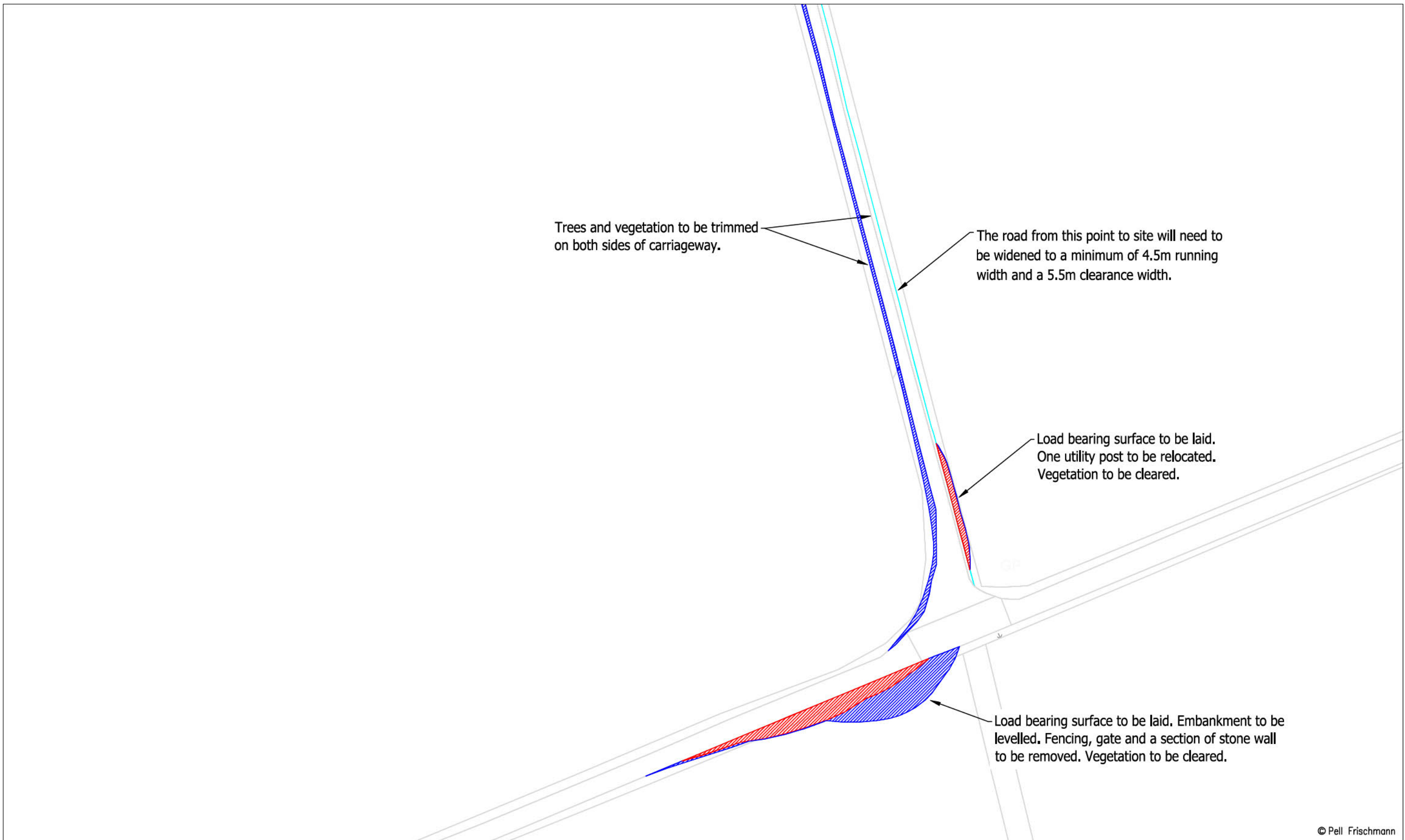
Blade

Tower



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		Client		Drawing Title		Point of Interest		Drawing No.		Revision	
EDF		Siemens SG170 Blade and Tower		56		SK26		Notes:		1	
Key Wheel SPA   Body SPA   Load SPA   Indicative   Over-run   Over-sail		SPA Location		B6456/Unclassified Road Junction		1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only.		Scale 1:1250 @ A3 File No. 200522 Dunside Tracking - CN.dwg Drawing Status Draft			

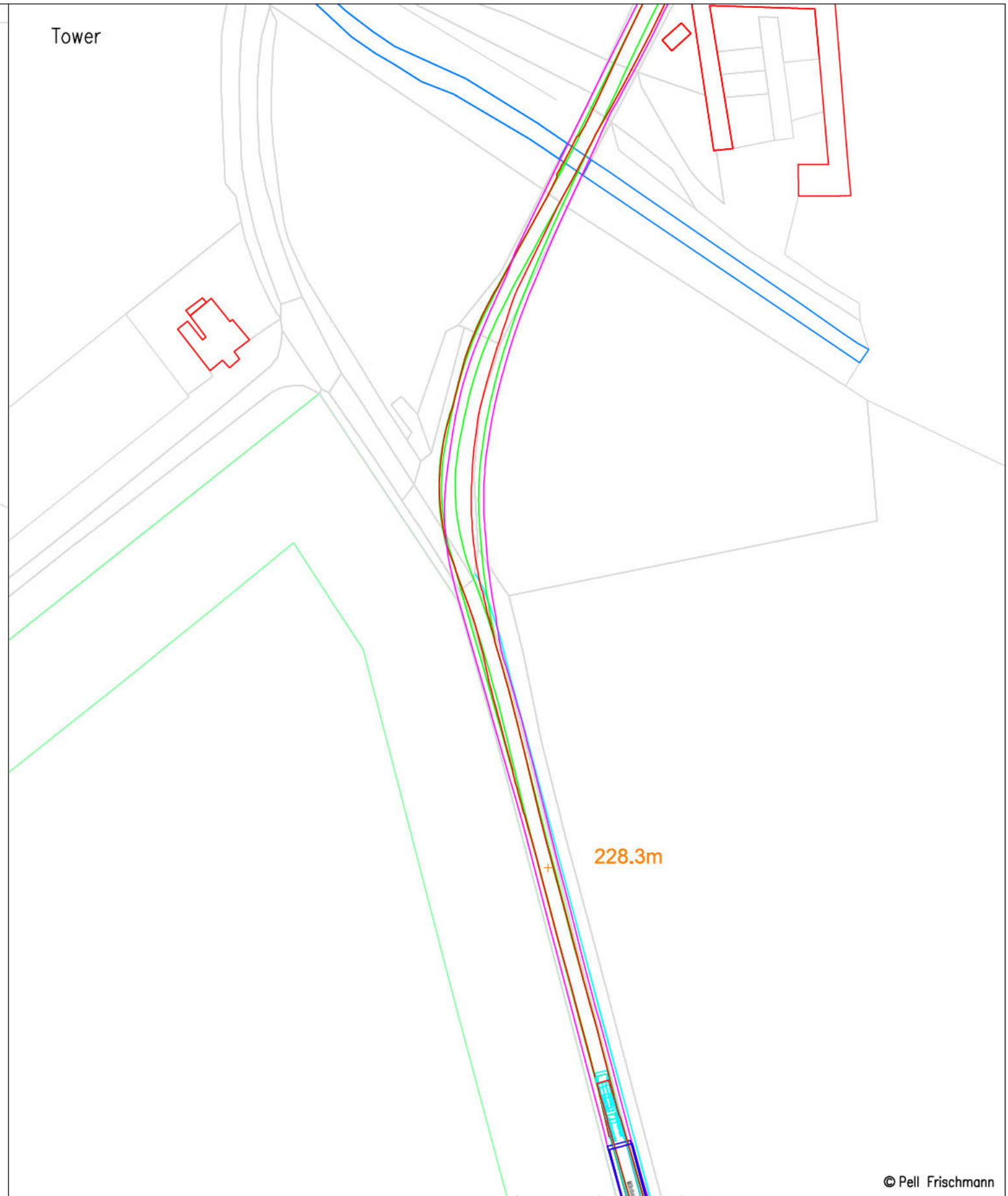
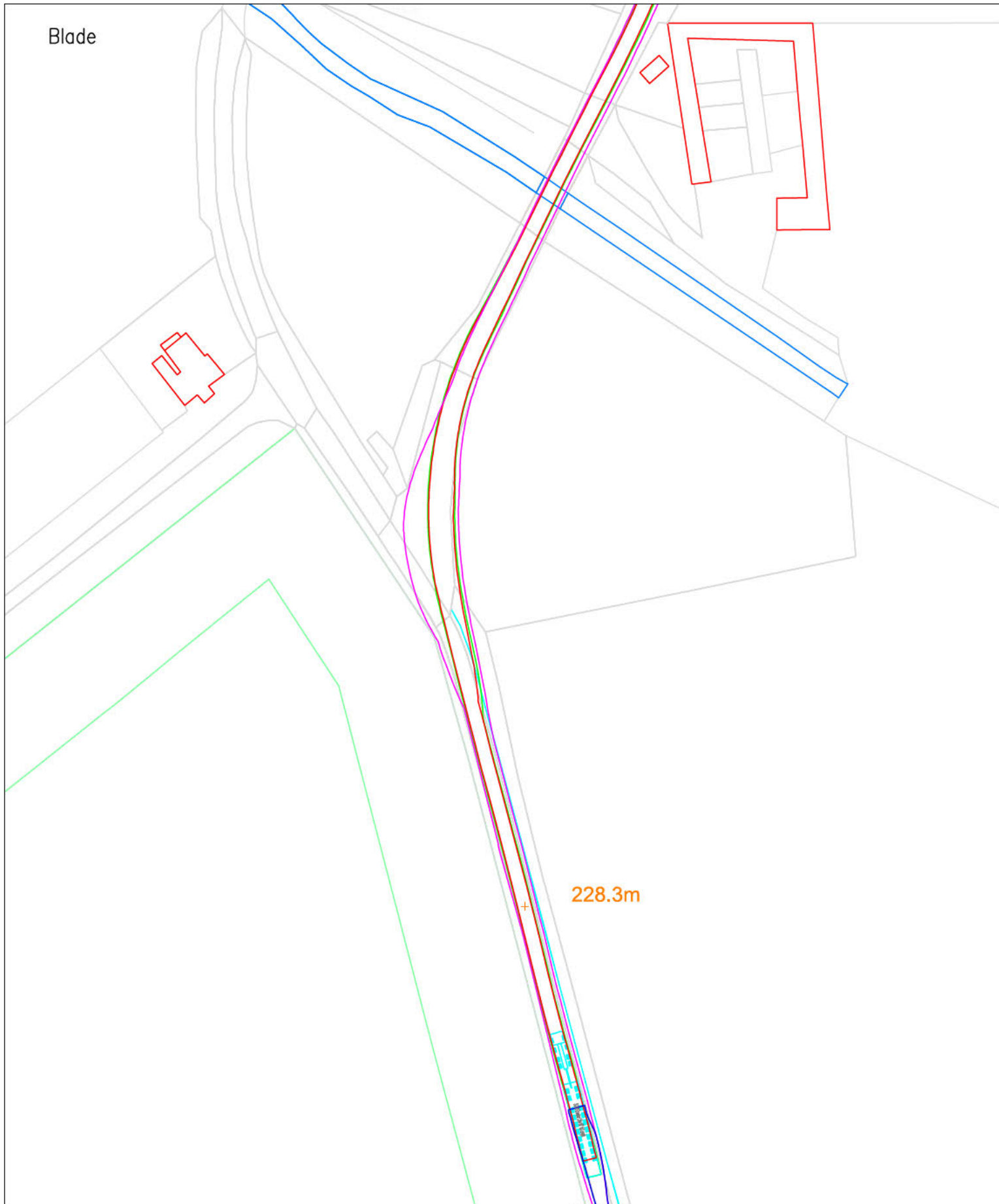


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		Client		Drawing Title		Designed	SK	02/06/2022	File No.	200522 Dunside Tracking - CN.dwg	
EDF		SPA Location		Checked	GB	02/06/2022	Drawing Status	Draft		Revision	1
Key Wheel SPA   Body SPA   Load SPA   Indicative   Over-run   Over-sail		Siemens SG170 Blade and Tower		Point of Interest	56		Drawing No.	SK26A		Notes: 1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only.	
		B6456/Unclassified Road Junction									

Blade

Tower



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Client

EDF

Project

Dunside Wind Farm

Drawing Title

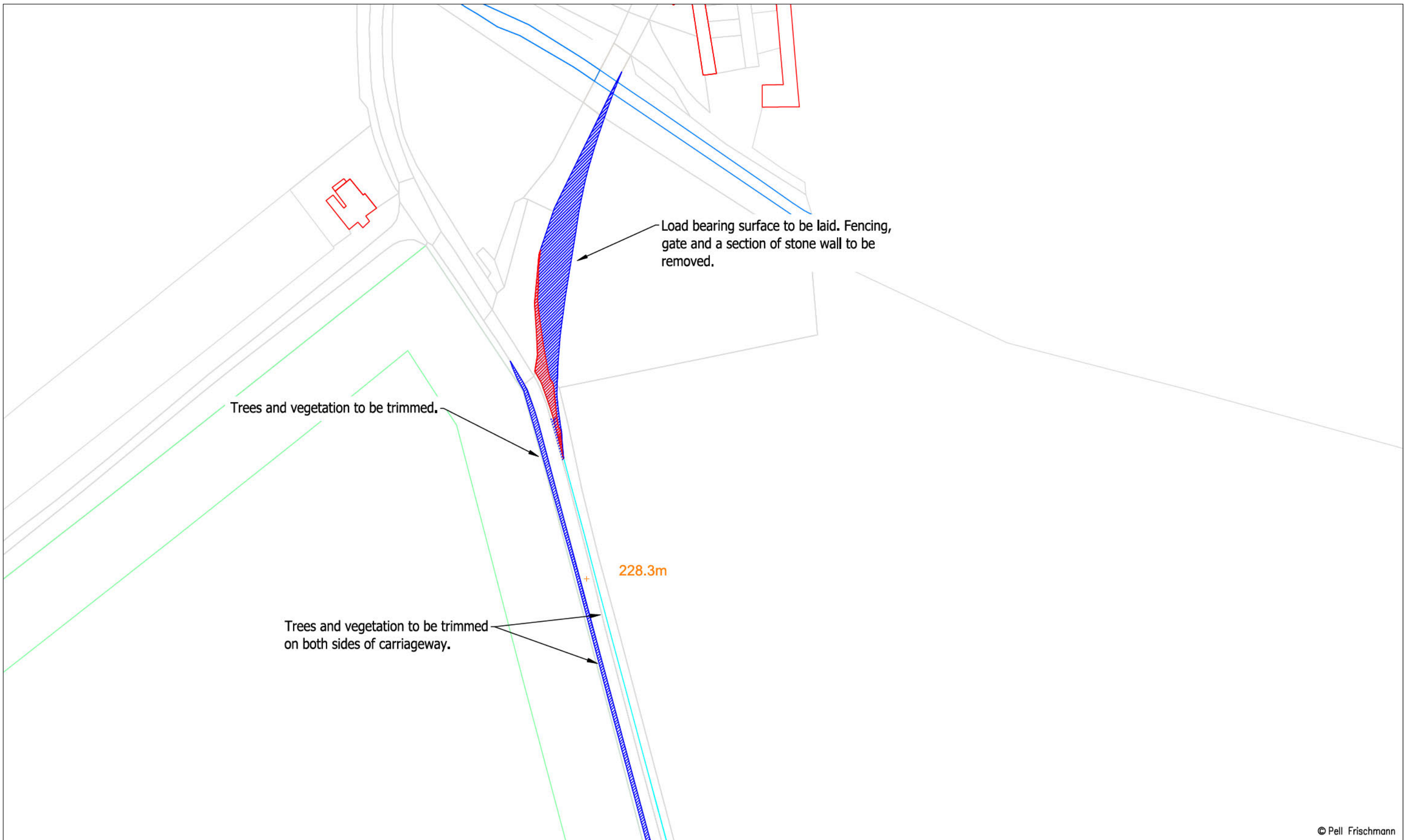
Siemens SG170 Blade and Tower

SPA Location

Unclassified Road – Site Access

	Name	Date	Scale
Drawn	SK	02/06/2022	1:1500 @ A3
Designed	SK	02/06/2022	File No. 200522 Dunside Tracking – CN.dwg
Checked	GB	02/06/2022	
Point of Interest			Drawing Status
57			Draft
Drawing No.	Notes:		Revision
SK27	1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only.		1

Key						
	Wheel SPA	Body SPA	Load SPA	Indicative	Over-run	Over-sail



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		Client		Drawing Title		Point of Interest		Drawing No.		Revision	
EDF		Siemens SG170 Blade and Tower		57		SK		02/06/2022		1:1500 @ A3	
Key		SPA Location		SK27A		GB		02/06/2022		File No. 200522 Dunside Tracking - CN.dwg	
Wheel SPA	Body SPA	Load SPA	Indicative	Over-run	Over-sail	Notes:		1. All mitigation is subject to confirmation through a test run.		2. This is not a construction drawing and is intended for illustration purposes only.	
										1	

Appendix C ESDAL  
Correspondence

## Stephen Cochrane

---

**From:** George Smith  
**Sent:** 08 June 2023 10:48  
**To:** [REDACTED]

**Subject:** Dunside ESDAL

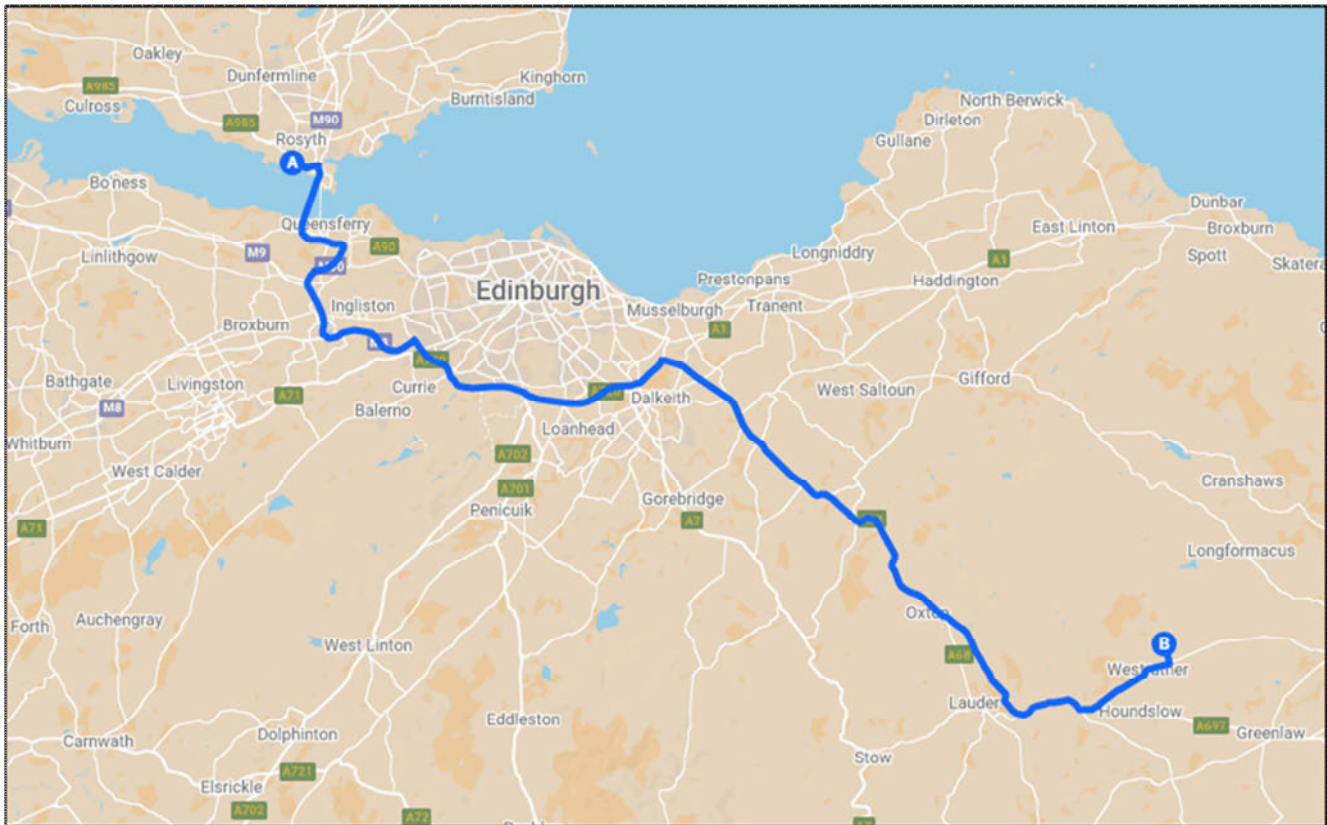
Hello,

We have been commissioned to undertake a route review for the proposed Dunside Wind Farm, north of Westruther, on the border of East Lothian and the Scottish Borders. The proposed Port of Entry is Rosyth Port, Fife.

The proposed access route to site is as follows:

- Loads would exit the port onto Keith Road and would then proceed eastbound;
- Loads would then merge onto the B981 before turning right onto the M90 southbound;
- Loads would continue southbound on the M90 until the Interchange with the M9 and M9 Junction 1a;
- Loads would merge onto the M8 at Newbridge and would proceed towards Edinburgh until Hermiston Gait, where they would turn right and would join the A720 Edinburgh City Bypass;
- Loads would continue eastbound on the length of the A720 before exiting at the Millerhill Interchange;
- Loads would proceed southbound on the A68 until Carfraemill when they would turn left onto the A697 eastbound;
- Loads would turn left onto the B6456 and would proceed through Westruther;
- To the east of Westruther, loads would turn left onto an unclassified road. From here, loads would proceed northbound before turning right into the existing site access junction.

The proposed access route is illustrated below:



The maximum axle load is 12 tonnes, with the gross vehicle weight for the heaviest load expected to be in the region of 130 tonnes. The maximum height is 4.9m, with the widest load at 4.7m. The longest loads will have a rigid length of 84m. The assessment is at an early stage at present, though I would be grateful if you could confirm if there are any structures along the route that may present a particular issue. A more detailed assessment will be undertaken once the turbine haulier and turbine model have been selected by the developer.

Kind regards,

George Smith

George Smith  
Graduate Transport Planner  
93 George Street  
Edinburgh  
EH2 3ES

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Stephen Cochrane

---

From: [REDACTED]  
Sent: 12 June 2023 11:21  
To: George Smith  
Cc: SE Abnormal Loads  
Subject: RE: Dunside ESDAL



Good morning George,

Having reviewed the below the only issue we have is that we have a blanket 80 tonne restriction across the A68 trunk road so the highlighted sections are the areas we would require to assess further once you have the entire movement configuration confirmed. This will allow us to complete a high level sense check across the region of the A68 you will be travelling.

As you have said below, once you have this, please submit a Special Order and this will allow us to give you a more detailed response once we can assess the axel weights, lengths etc against each structure it will cross.

Also for your information we also have a restriction as follows that you should be aware of:

---

Due to restrictions on the [M9S 1-1 40 Newmains East](#) structure, which is located on the M9 southbound carriageway at Junction 1a with the M90, west of Kirkliston where the M9 crosses the B9080, this load cannot use Lane 2 of the slip road or the central chevrons between the slip road and main carriageway, as shown in the photo below. When using the slip road, the load must stay as close to the bus lane side as possible. When staying on the main carriageway the load may use the hatched area next to the central reservation. The load can still go ahead but must avoid using the restricted lane and follow the above guidance.



Thank you.

Please note that neither the Operating Company nor the Scottish Ministers or Director assume responsibility of any kind in connection with the movement of the relevant abnormal indivisible load or abnormal vehicle, and in following any advice provided, the owner and the operator of the vehicle shall not be relieved of any of their obligations or liabilities under the relevant Legislation.

Police Scotland manages the movement of abnormal loads throughout Scotland. Anyone who wants to move an abnormal load throughout Scotland has a legal obligation to notify the Chief Officer of Police Scotland. Email [REDACTED] or visit the Abnormal Loads & Agricultural section of the Police Scotland [website](#) for more information.



Kind regards,

**Lewis Kane**  
**Graduate Engineer | BEAR Scotland | NMC - South East Unit**  
Mobile: [REDACTED] | Visit us @ [www.bearsco.com](http://www.bearsco.com)



From: [REDACTED]

Sent: Thursday, June 8, 2023 10:48 AM

To: [REDACTED]

Subject: Dunside ESDAL

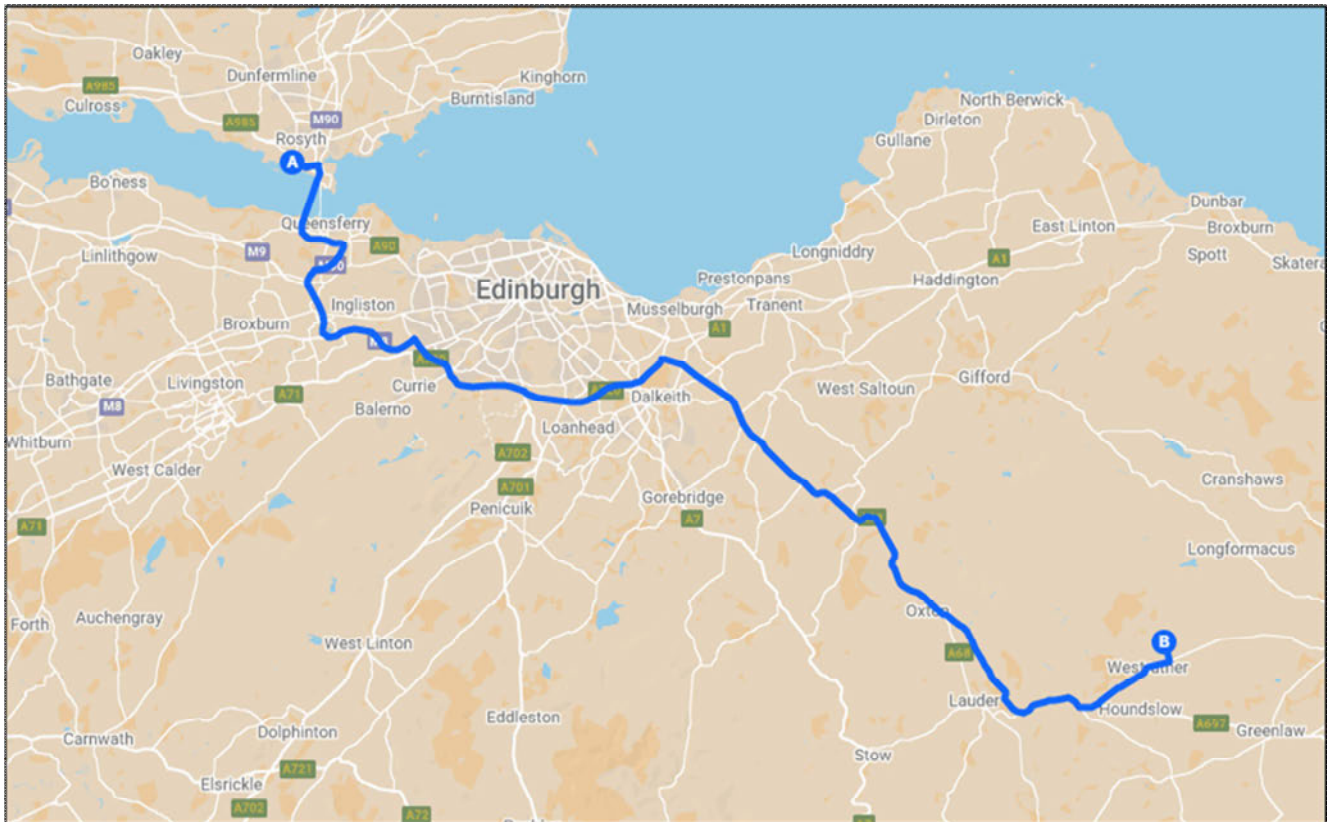
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EH2 3ES

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Stephen Cochrane

---

From: SC Abnormal Loads [REDACTED]  
Sent: 08 June 2023 11:20  
To: George Smith  
Subject: RE: Dunside ESDAL



Good morning,

No Scottish Canals structures affected.

Thanks,  
Brian.

---

From: George Smith [REDACTED]  
Sent: Thursday, June 8, 2023 10:48 AM  
To: [REDACTED]

Subject: Dunside ESDAL

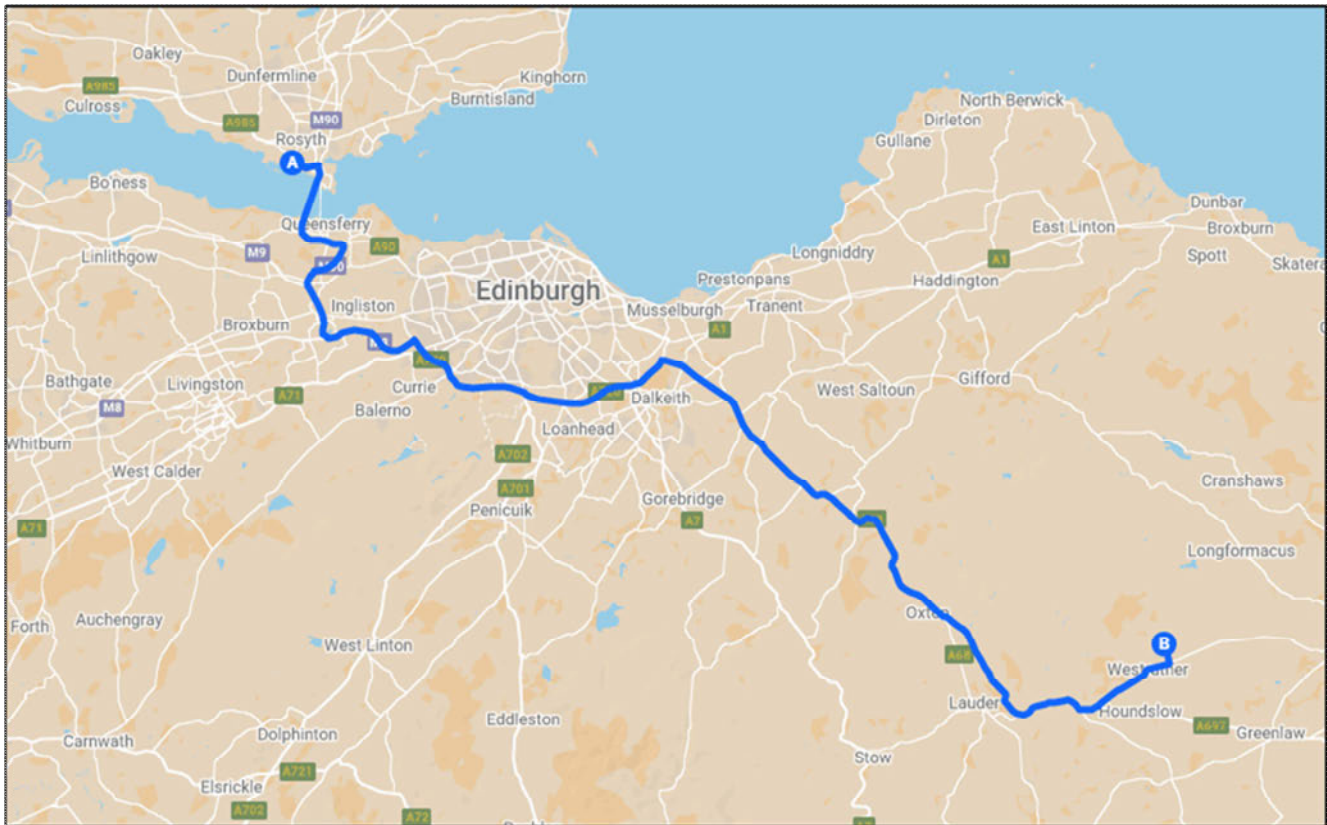
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George Smith  
Graduate Transport Planner  
93 George Street  
Edinburgh  
EH2 3ES

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## Stephen Cochrane

---

**From:** Fifetrans Abnormal-Loads [REDACTED]  
**Sent:** 09 June 2023 08:50  
**To:** George Smith  
**Cc:** Jenna Brown  
**Subject:** Re: Dunside ESDAL



Hi George,

I would like to let you know that the route you proposed is suited to travel.

Regards  
Mariana Fonseca

---

**From:** George Smith [REDACTED]  
**Sent:** Thursday, June 8, 2023 10:48 AM  
**To:** Fifetrans Abnormal-Loads [REDACTED]

**Subject:** Dunside ESDAL

**CAUTION:** This email originated from outside of the organisation. Do not click links or open attachments unless you recognise the sender and know the content is safe.

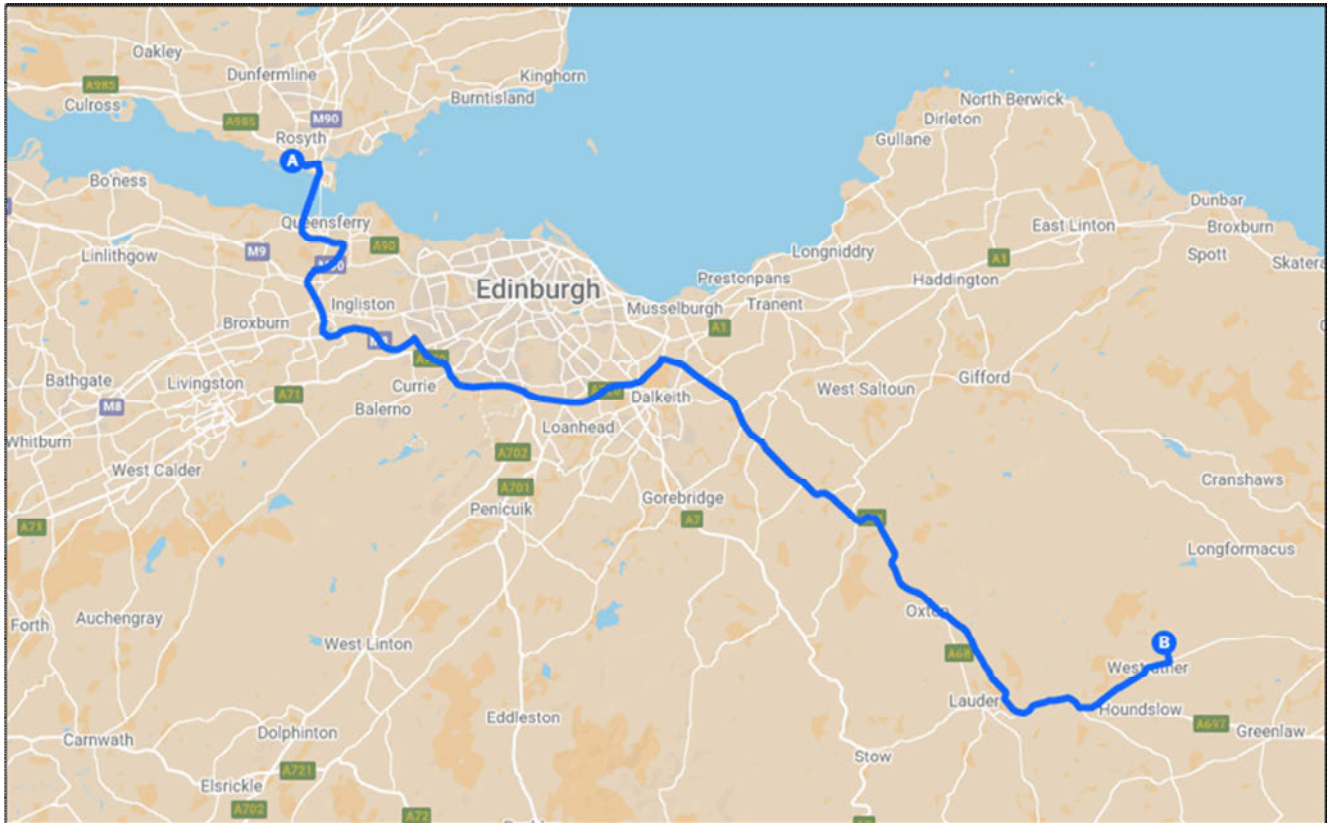
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93 George Street  
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Stephen Cochrane

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From: rsgbrb [REDACTED]  
Sent: 09 June 2023 10:48  
To: George Smith  
Subject: RE: Dunside ESDAL



Dear George,

Thank you for your enquiry.

I have assessed the proposed route, and can confirm that no Historical Railways Estate structures will be affected.

I therefore have no objections, or any further comment to make.

Regards

Tania

Tania Howell

Abnormal Loads Officer (on behalf of National Highways Historical Railways Estate)

Jacobs

DDI : [REDACTED]

If your mail concerns abnormal load movements, please reply to [REDACTED]

---

From: George Smith [REDACTED]  
Sent: 08 June 2023 10:48

To: [REDACTED]

Subject: [EXTERNAL] Dunside ESDAL

Hello,

We have been commissioned to undertake a route review for the proposed Dunside Wind Farm, north of Westruther, on the border of East Lothian and the Scottish Borders. The proposed Port of Entry is Rosyth Port, Fife.

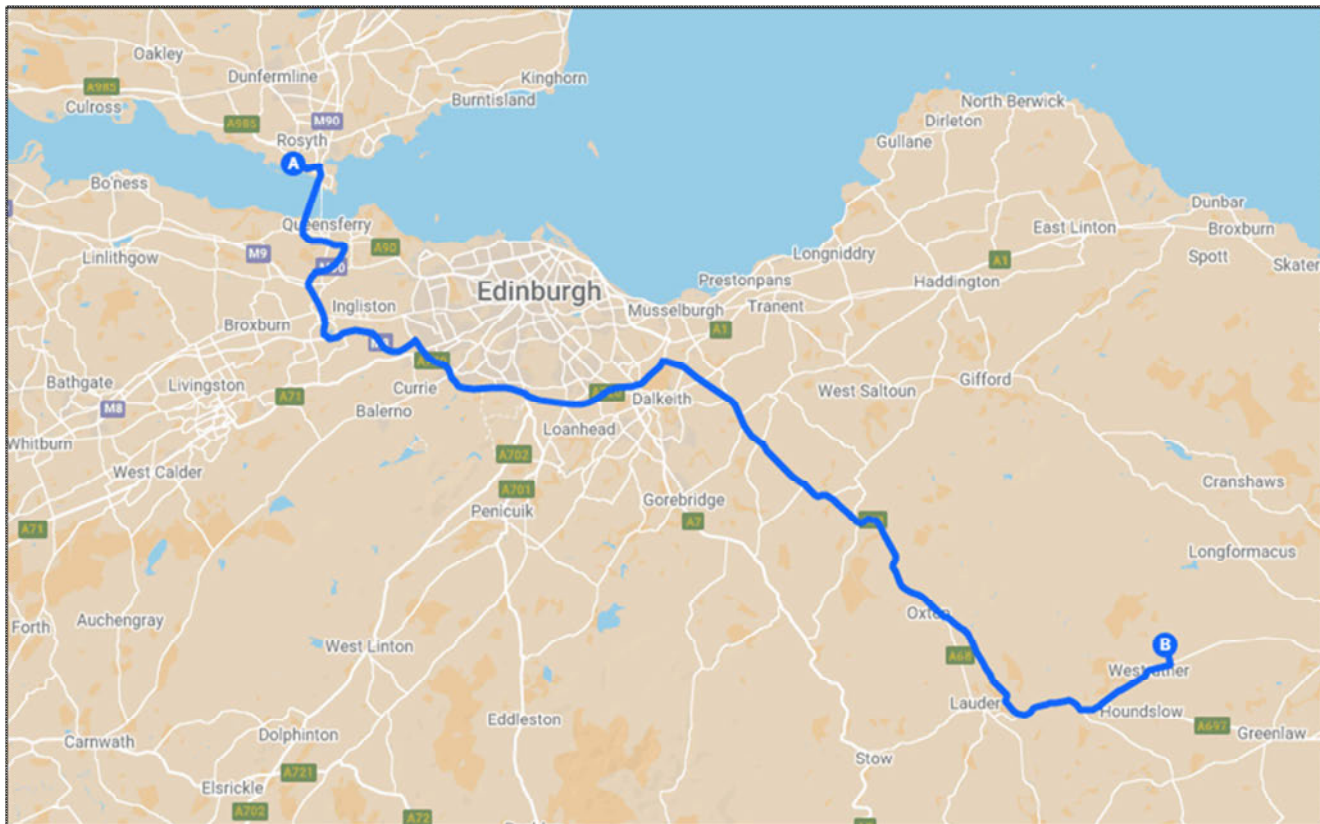
The proposed access route to site is as follows:

- Loads would exit the port onto Keith Road and would then proceed eastbound;
- Loads would then merge onto the B981 before turning right onto the M90 southbound;
- Loads would continue southbound on the M90 until the Interchange with the M9 and M9 Junction 1a;
- Loads would merge onto the M8 at Newbridge and would proceed towards Edinburgh until Hermiston Gait, where they would turn right and would join the A720 Edinburgh City Bypass;
- Loads would continue eastbound on the length of the A720 before exiting at the Millerhill Interchange;
- Loads would proceed southbound on the A68 until Carfraemill when they would turn left onto the A697 eastbound;



- Loads would turn left onto the B6456 and would proceed through Westruther;
- To the east of Westruther, loads would turn left onto an unclassified road. From here, loads would proceed northbound before turning right into the existing site access junction.

The proposed access route is illustrated below:



The maximum axle load is 12 tonnes, with the gross vehicle weight for the heaviest load expected to be in the region of 130 tonnes. The maximum height is 4.9m, with the widest load at 4.7m. The longest loads will have a rigid length of 84m. The assessment is at an early stage at present, though I would be grateful if you could confirm if there are any structures along the route that may present a particular issue. A more detailed assessment will be undertaken once the turbine haulier and turbine model have been selected by the developer.

Kind regards,

George Smith

George Smith  
 Graduate Transport Planner  
 93 George Street  
 Edinburgh  
 EH2 3ES

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Stephen Cochrane

---

From: OSD Abnormal Loads Scotland  
[REDACTED]  
Sent: 08 June 2023 10:56  
To: George Smith  
Subject: RE: Dunside ESDAL



Good Morning,

In response to your email enquiry dated 08<sup>th</sup> June 2023<sup>ac</sup>, I can provide the following information on behalf of Police Scotland.

When a haulier has been selected for a particular project and they have been furnished with precise dimensions of the load to be transported by road, thereafter as part of the planning process a detailed route survey is produced by the haulier identifying all potential issues often referred to as "pinch points" along the entire proposed route. The route is then examined and commented upon by Transport Scotland /Transerv and the relevant Local Council amongst other partners.

Police Scotland consider the proposed route primarily from a road safety perspective .If due to the abnormal dimensions it is apparent other road users will be required to be directed to stop along the route by police in order to safely facilitate the movement or encroachment into an opposing undivided carriageway will occur, then police officers will be deployed to warn other road users of the presence of the abnormal load. The timings of the movements are dependent on many factors dependant on the route and Transport Scotland may place restrictions on travel during peak times to ensure journey time reliability along their trunk road network.

In general terms the movement of Abnormal Indivisible Loads (A.I.L) along most if not all routes in more rural areas, from my experience has an impact on the infrastructure of the general area and local community although Police Scotland are not best placed to comment in detail on this subject. Examples of this from previous projects could include, delays to freight traffic travelling to or from ferry ports, delays experienced by bus services including tourist bus tours operated in the area (Invergordon Port being a cruise ship port), delays to teachers and or pupils attending for scheduled school start times and delays to staff and the public attending hospital or medical appointments.

Regards

**Frankie Anderson**  
**Business Support Administrator**  
**Vehicle Recovery & Abnormal Loads**  
**Police Scotland**  
**Fife Divisional HQ**  
**Detroit Road**  
**Glenrothes**  
**Fife**  
**KY6 2RJ**

Tel: [REDACTED] or Mobile : [REDACTED] – (Mon – Thu between 0800 – 1600 hrs)

**(not monitored 24/7 if no response call 101 or send email)**

Email: [REDACTED]

Website: <http://www.scotland.police.uk/>

Twitter: @policescotland

Facebook: [www.facebook.com/policescotland](http://www.facebook.com/policescotland)

It is the responsibility of the Haulier to check for any roadworks that affect your route as there may be planned or emergency works

**PLEASE NOTE THAT OUR BUSINESS EMAIL HAS CHANGED AND IS NOW**

**A9 North of Inveralmond – Restrictions will be in place through the roadworks from 11 Apr 23 for 22 weeks All Low loader Abnormal Loads that exceed 3m are to pull into the designated wide load holding bays and are to contact [REDACTED] to await to be escorted through the roadworks by the Traffic Management Team.**

**All Abnormal Loads with a ground clearance of 1m up to 3.9m wide are to pull into the designated wide load holding bays and are to contact [REDACTED], to await to be escorted through the roadworks by the Traffic Management Team.**

**All Low-loader Abnormal Loads that are greater than 3m wide or Abnormal loads over 3.9m wide with a ground clearance of 1m, are to be held at the designated wide load holding place and will be moved at 2000 hrs or 0500 hrs daily. Contact is to be made 48 hrs prior to arrival on [REDACTED].**

**Any Haulier not adhering to this notice could be committing a Road Traffic Offence and could be reported to the Procurator Fiscal and Traffic Commissioner.**

Abnormal Load movements using the A84 between Stirling and Lochearnhead.

1. Abnormal loads up to 44T (oversized loads) can continue to use A84 Drip Bridge.
2. Abnormal loads greater than 44T shall be directed to avoid A84 Drip Bridge by using A811 and Kirk Lane (under Police Escort) back onto A84. The weight restriction on Kirk Bridge is an amenity weight restriction, not structural. For loads not wider than ~6m-haulier to check suitability re width.
3. Abnormal loads that are greater than 44T and oversized, but not exceeding 80T, can use A84 Drip Bridge under Full Caution. That means Police Escort @ 10-12mph, constant speed, no breaking and no other vehicles.
4. All overweight abnormal loads that would have passed between Stirling and Lochearnhead on A84 going north, must do so Via A9/A85 or A9 A86.

Its anticipated that this may be in force for 3-5 years for repair only to A84 Drip Bridge, or 8-10 years for replacement, dependant on bridge condition.

---

From: George Smith [REDACTED]  
Sent: 08 June 2023 10:48

To: [REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]

Subject: Dunside ESDAL

**CAUTION:** This email originated from outside the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

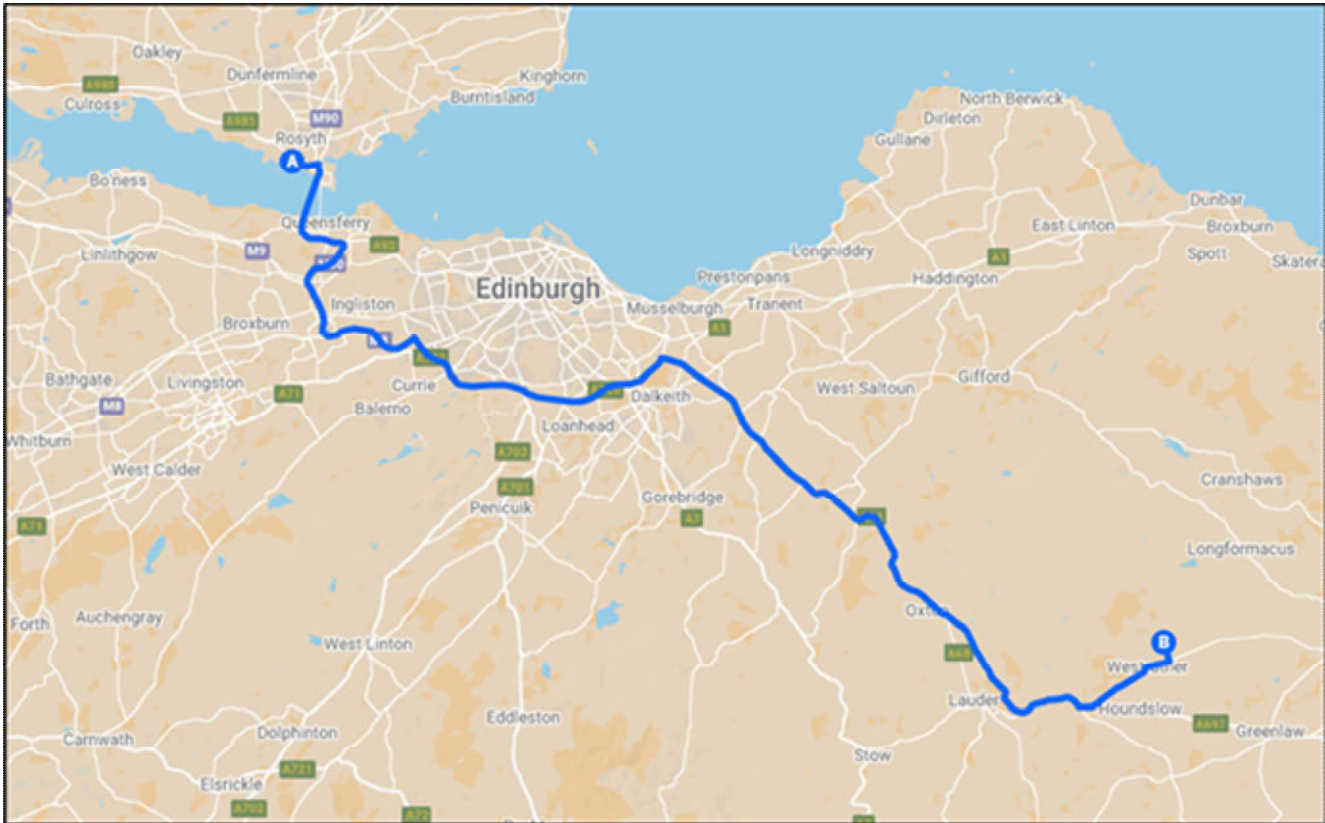
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Kind regards,

George Smith

George Smith  
Graduate Transport Planner  
93 George Street  
Edinburgh T: [REDACTED]  
EH2 3ES D: [REDACTED]

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## Appendix B Indicative Access Junction

Figure 3.8a: Widening at Junction with B6456

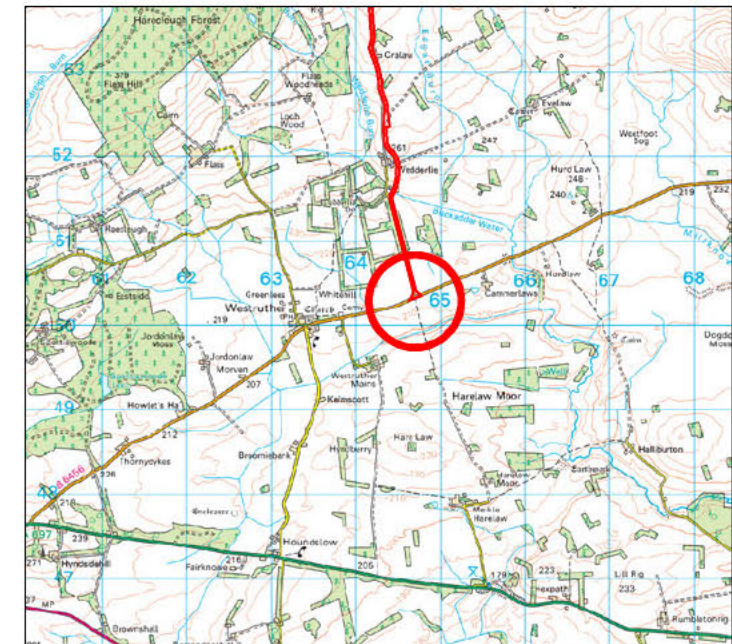
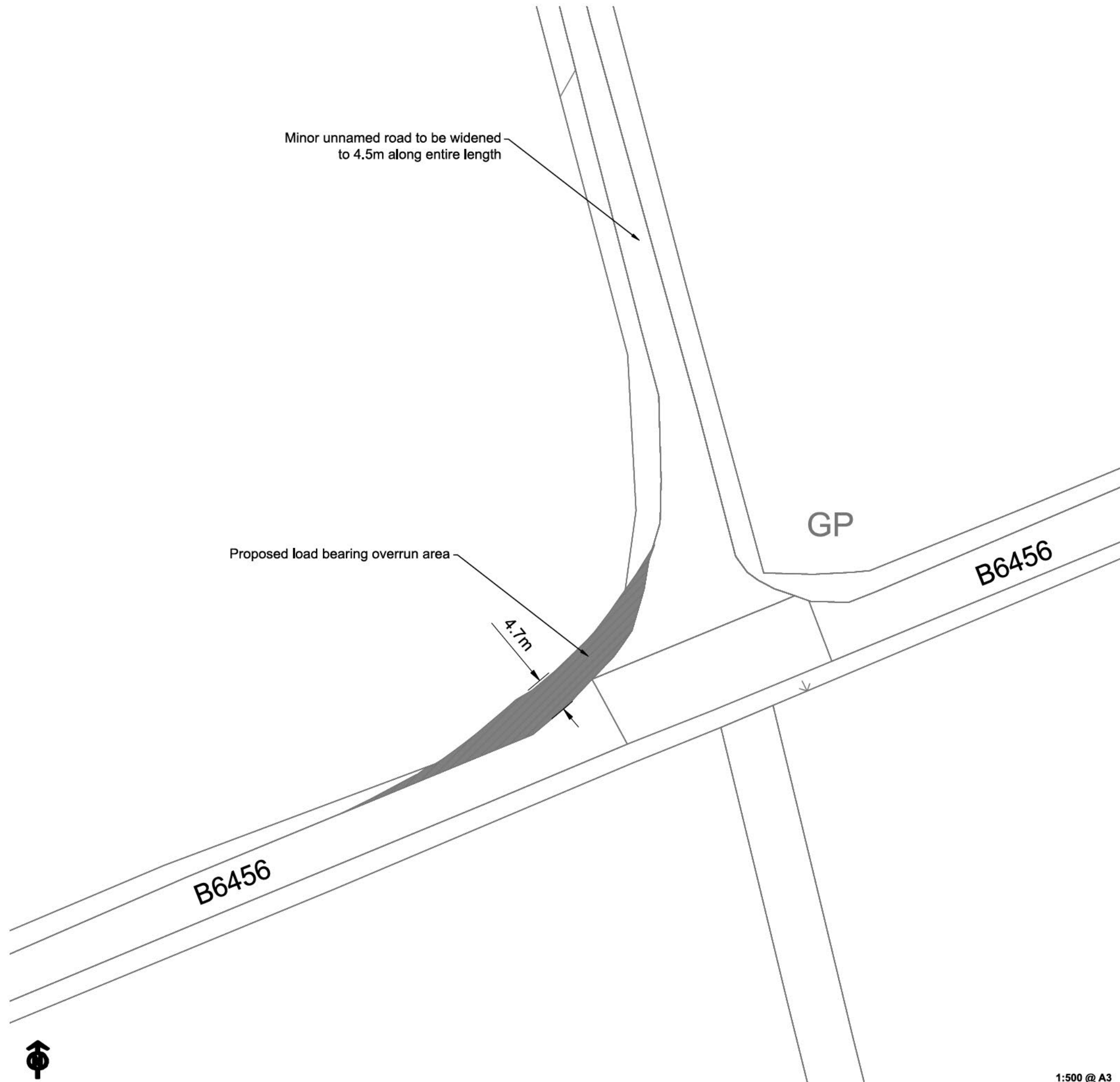


Figure 3.8b: Outline Access Junction Design

